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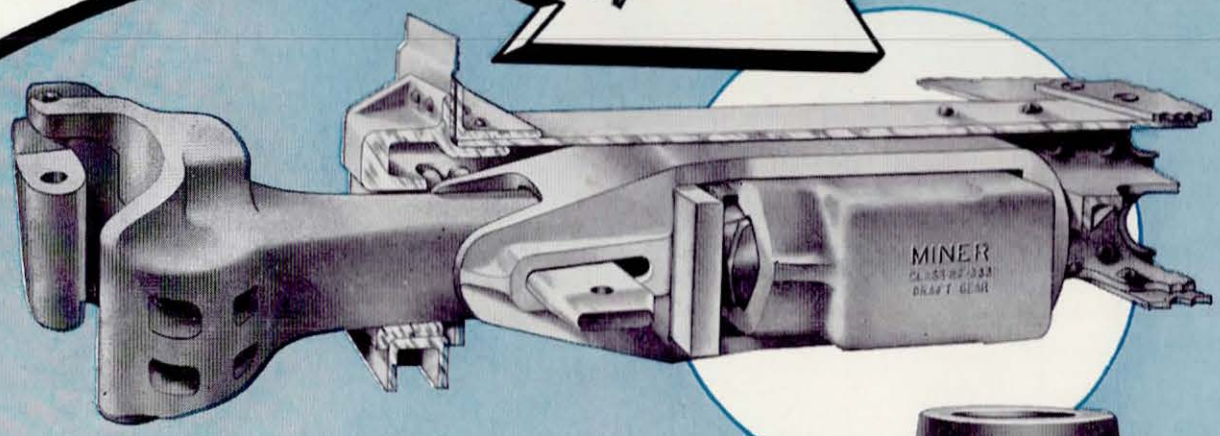

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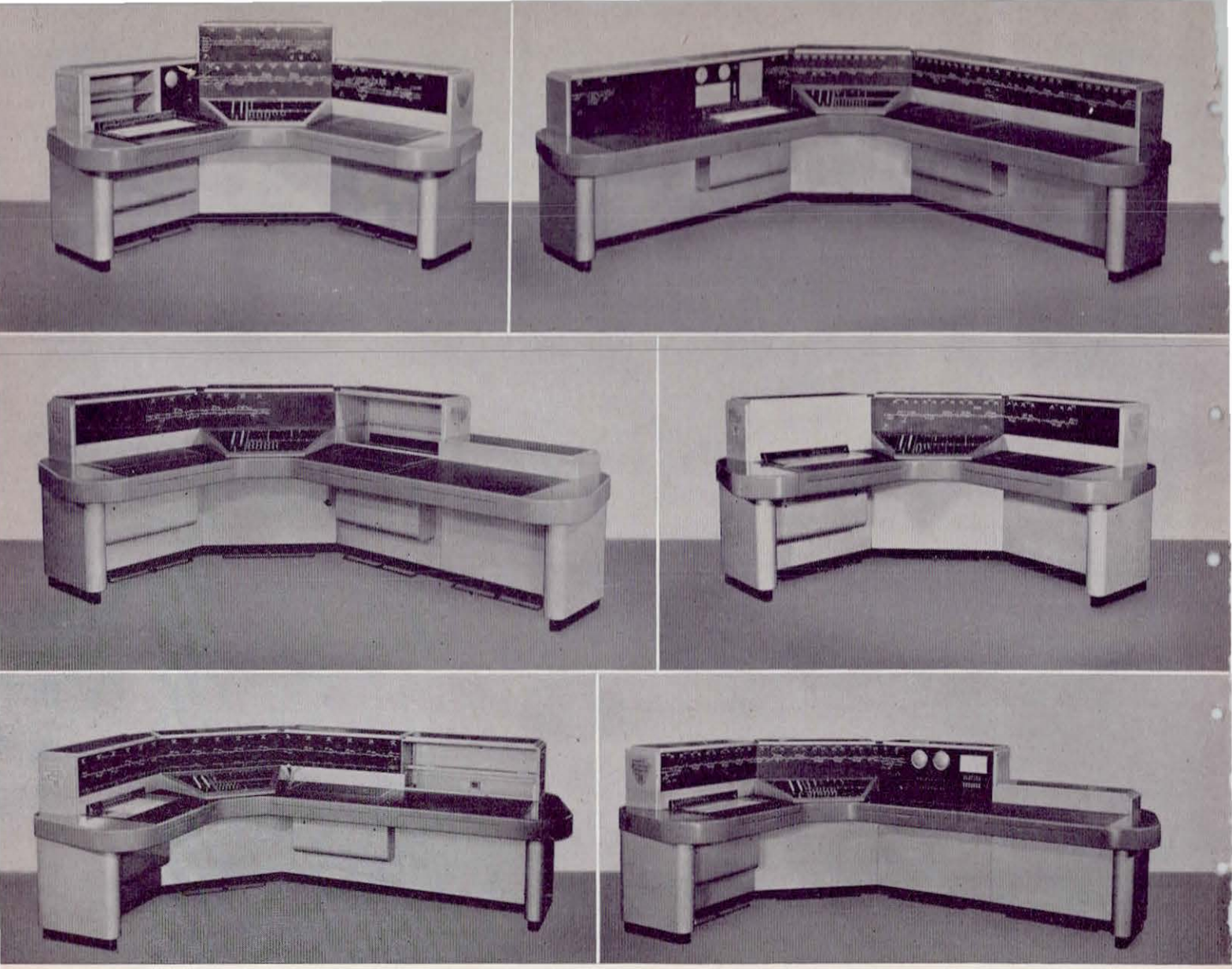

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RAILWAY AGE *weekly* June 20, 1960 • Vol. 148, No. 25

Week at a Glance

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NYC asks merger 'ground rules' .....p. 9

C&O's decision to ask ICC for permission to acquire control of the B&O was followed by two fast moves by the NYC: (1) A request that the Commission consider new "ground rules" for eastern mergers; (2) an announcment that NYC will consider making its own proposal to B&O stockholders. Meanwhile, N&W and NKP reached agreement on merger terms.

Cover Story—Mechanical division meets in San Francisco.....p.14

The convention heard SP's D. J. Russell call for broader, interdepartmental thinking, and a plea for revised per diem rates that would spur new equipment development from Southern VP D. W. Brosnan.

Cover Story—Re-dieselize and save money, says EMD p.20

The savings, EMD believes, would be comparable to those realized from the railroads' initial dieselization. Diesel replacement offers added motive power capacity, as well as fuel economy, and lower operating and maintenance costs.

Cover Story—Santa Fe impresses engineering students p.28

Railroading still offers challenge and opportunity. The Santa Fe has been demonstrating this to civil engineering students by showing them its huge line-change job in Arizona.

Microwave: The pros and cons p.30

The plus and minus factors that must be considered in microwave planning were outlined in special committee reports presented at the AAR's Communications Section meeting in Detroit last week.

The Action Page—Spotlight on freight traffic p.42

Railroads urgently need more revenue to meet the cost of increased wage rates. The revenue will have to be brought in by the traffic department. Here's a list of some major assignments on the agenda of most traffic departments.

Short and Significant

Repeal of the 10% tax on fares . . .

is expected to be put up to the Senate this week. The Senate Committee on Finance last week added a repealer amendment to the House-passed bill which proposes to continue the levy. Under legislation enacted last year, this tax is scheduled to be cut to 5% on July 1. Letting that legislation become effective

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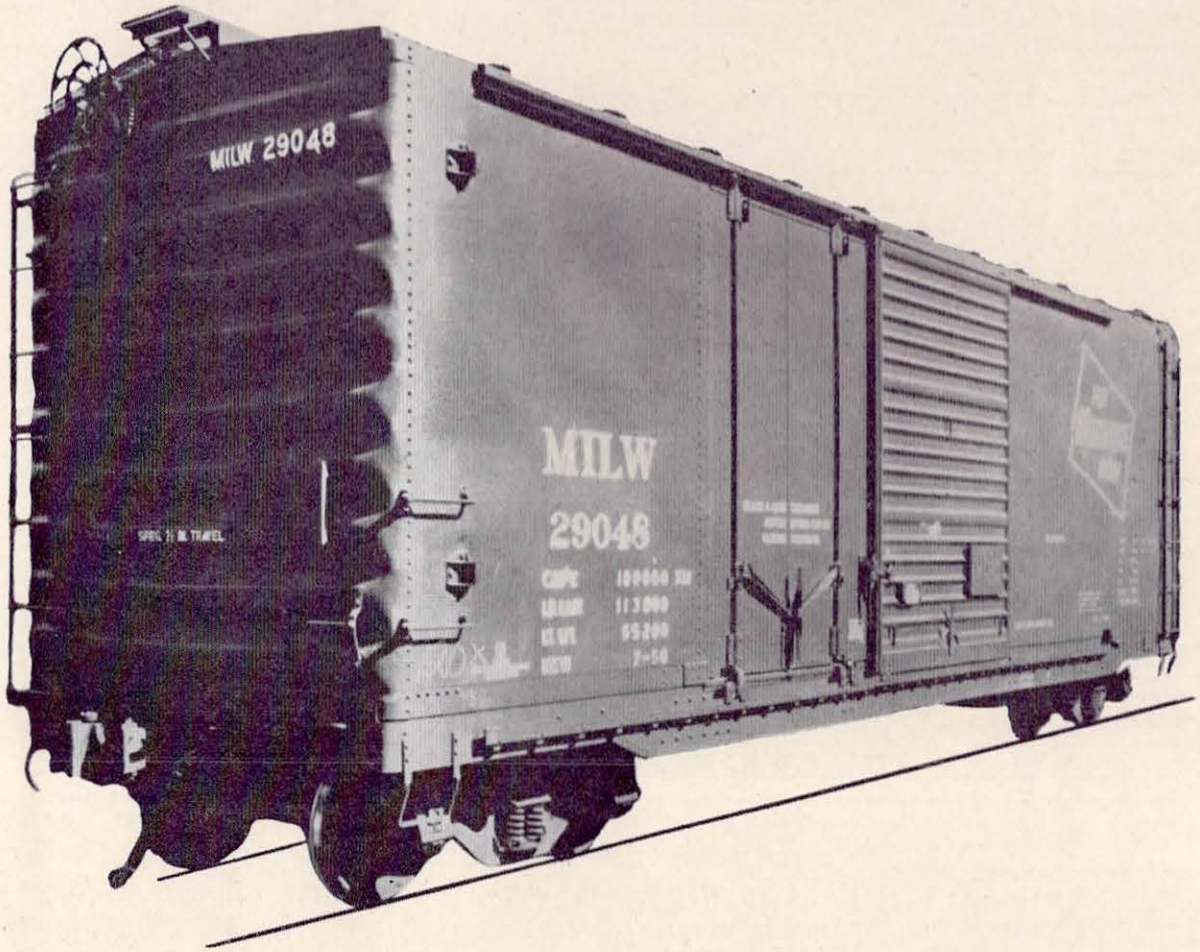

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Week at a Glance CONT.

Current Statistics

Operating revenues	
4 mos., 1960 ...	$3,234,559,129
4 mos., 1959 ...	3,246,255,701
Operating expenses	
4 mos. 1960 ...	2,547,246,510
4 mos., 1959 ...	2,561,979,109
Taxes	
4 mos., 1960 ...	360,571,999
4 mos., 1959 ...	342,591,970
Net railway operating income	
4 mos., 1960 ...	211,989,020
4 mos., 1959 ...	236,919,680
Net income estimated	
4 mos., 1960 ...	147,000,000
4 mos., 1959 ...	162,000,000
Aver ge price railroad stocks	
June 14, 1960 ..	96.46
June 16, 1959 ..	108.85
Carloadings, revenue freight	
22 wks., 1960 ..	13,200,414
22 wks., 1959 ..	13,562,370
Freight cars on order	
May 1, 1960 ...	41,003
May 1, 1959 ...	35,479
Freight cars delivered	
4 mos., 1960 ..	19,429
4 mos., 1959 ..	10,964

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could be a compromise between proponents of complete repeal and those favoring continuance of the tax on the 10% basis.

Double-deck commuter cars . . .

may be ordered by a fourth Chicago railroad. Two roads, Burlington and C&NW, have such equipment now, and a third road, Milwaukee, recently placed an order for 40. C&NW Chairman Ben W. Heineman told a Senate subcommittee recently that he'd heard unofficially "that at least one other Chicago road is considering the acquisition of such coaches, although no decision has yet been made."

New rate puzzle . . .

confronts chief traffic officers as a result of rising labor costs. There's some support, apparently, for a general rate increase. Others favor alternatives including absorption of costs by further economies; selected increases on movements now handled at a loss; more application of incentive rates to build traffic revenue. In the East, meetings of traffic executives during the next two weeks may develop more specific proposals.

Incentive per diem bill . . .

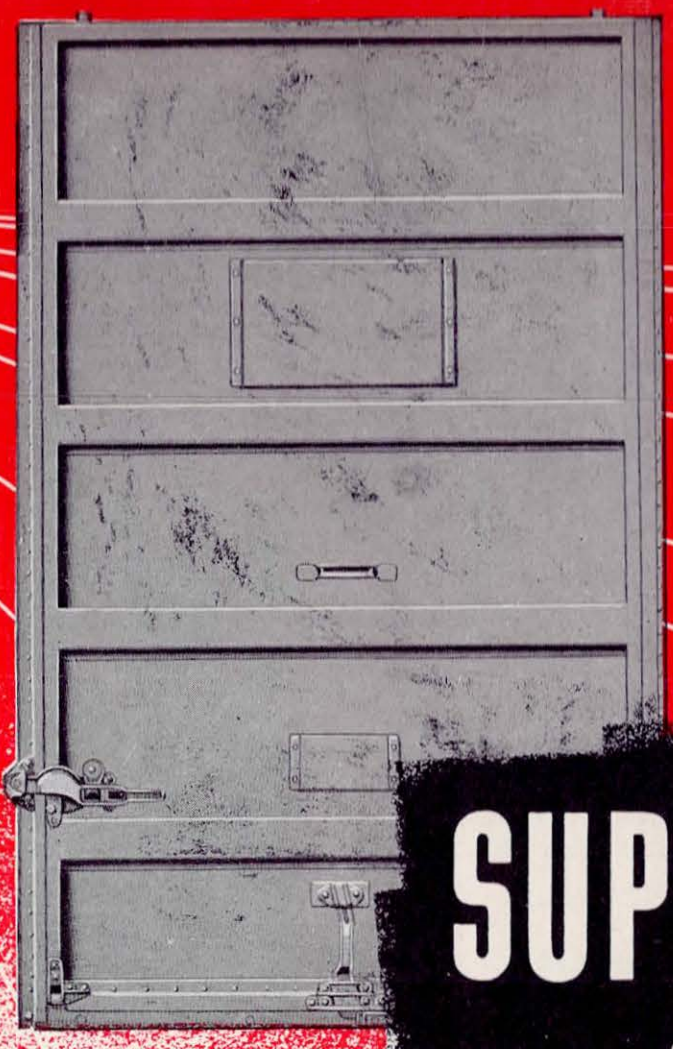
has cleared the House Committee on Interstate and Foreign Commerce. The committee has sent it to the House with a recommendation that it be passed. The bill, H.R.7937, would authorize the ICC to order increases in the per diem rate to promote buying of freight cars. A like bill, S.1789, is on the Senate calendar with a favorable report from the Senate Interstate Commerce Committee and a clearance from the policy committee of the Senate's Democratic majority.

Commuter-aid bill . . .

has been reported favorably to the Senate by its Committee on Banking and Currency. The bill, S.3278, would provide federal loans to municipalities for purchase of commuter cars and other facilities for lease to railroads. This is the program sponsored by the American Municipal Association and eastern railroads.

Arbitration hearings in the radio-telephone dispute . . .

involving the BLE and the Detroit, Toledo & Ironton are now scheduled to begin June 27 in Baltimore, Md. At issue: Union demands for payment of an arbitrary for use of train radio by engineers. Emergency board proceedings dealing with the same organization and a similar issue (along with other disputed points) are in progress in Los Angeles. The carrier involved: Santa Fe (Coast Lines).



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NYC Asks Merger 'Ground Rules'

► **The Story at a Glance: Railroad merger stories were back in the news last week with five eastern roads sharing the headlines.**

N&W and Nickel Plate announced Monday that they had agreed on merger terms; C&O asked ICC permission to acquire control of B&O by an exchange of stock, and NYC moved on the scene with two proposals: (1) On Monday the road asked ICC to establish merger "ground rules" for eastern roads, and (2) on Tuesday NYC announced tersely that directors would meet June 24 "to discuss a proposed offer to be made to shareholders of the B&O."

These developments left the merger situation mildly confused at week's end. Among the big questions being debated: Will eastern roads remain free to shape merger proposals on their own, or will the ICC accept NYC's "ground rules" petition and ultimately do the job for them?

Marrying two railroads is a complicated ceremony, even if all goes well. And last week, as plans were being pushed for two such weddings in the East, there was a call to have the nuptial rules rewritten.

The call came from New York Central. In a 14-page petition filed with the ICC, the Central asked the Commission to institute a general investigation aimed at establishing ground rules for railroad mergers in the East.

"Studies made by the Commission more than a quarter of a century ago are now out of date," NYC said, adding that the present case-by-case approach "virtually precludes adequate consideration of the public interest."

Apart from suggesting that "public interest requires that a new study be made," the NYC did not elaborate on why it had filed the petition at this time. There was speculation that the fast-moving C&O-B&O courtship was a factor, and virtual confirmation of this came within 24 hours after the Central's petition went to the ICC.

Late last Tuesday, NYC issued the following one-sentence statement: "Alfred E. Perlman, president of the New York Central, announced today that he has called a special meeting of the Board of Directors of the company for Friday, June 24, to discuss a proposed offer to be made to shareholders of the Baltimore & Ohio."

Again, the Central declined further comment. The statement itself, however, suggested two possible alternatives. The NYC board could, after discussion, decide against any offer to B&O; or, if an offer is made, it would cast B&O in the bridal role of having two suitors.

Meanwhile, the C&O last week was progressing along lines previously indicated, in which that road would acquire control of B&O by exchanging C&O stock for all B&O shares outstanding (RA, May 23, p. 9).

The C&O filed two applications with the ICC last week—one, seeking authority to acquire control of B&O with the exchange of stock; the other, asking authority to issue sufficient new shares of stock to handle the exchange. Slightly more than 2,000,000 C&O shares would be required.

Just how NYC would handle its offer to B&O shareholders, should it decide to make one on June 24, remains an open question. C&O's offer has already been transmitted to B&O stockholders by President Howard E. Simpson. B&O management might or might not elect to do the same thing with an NYC offer.

The apparent public confusion over the status of the three roads stemmed, in part at least, from public statements issued over the past four weeks. Early announcements by B&O and C&O did not mention NYC; but at NYC's annual meeting in Albany, N.Y., on May 26, Mr. Perlman said studies with the other two roads were continuing "with the idea of joining them in a mutually satisfactory arrangement."

In a broader sense, however, a merger embracing any of the three roads could not be divorced from other merger ideas being progressed in the East. No road wants to be left in relatively weaker position by standing aside while competing lines merge. Moreover, as NYC asked in its petition to ICC, what are the responsibilities of such newly-created systems in maintaining or absorbing so-called weak lines?

The other eastern merger plan that shared the news last week was between two strong carriers—the Norfolk & Western and Nickel Plate.

Following a special meeting in Philadelphia last Monday, N&W President Stuart T. Saunders and NKP President Felix S. Hales announced agreement on merger terms which, if finally approved by all parties, would make N&W the surviving company.

The agreement is contingent on obtaining a physical connection between the two roads and it is understood that this connection may be provided via PRR's 111-mi line between Columbus, Ohio, and Sandusky. Mr. Saunders said the line might be acquired outright, or, as an alternative, trackage rights could be sought.

The basis for the N&W-NKP merger plan is an exchange of stock—one share of Nickel Plate common for each 0.45 share of N&W common. If consummated on this basis, NKP shareholders would emerge with a 20.3% interest in N&W. The Pennsylvania presently has around 33% interest in N&W, but the Pocahontas line operates entirely independently.

N&W-NKP Merger at a Glance

	Norfolk & Western	Nickel Plate	Total
Locomotives	593	441	1,034
Freight train cars	81,006	28,014	109,020
Passenger train cars	286	88	374
Work equipment units	1,559	801	2,360
Operating revenues 1959	$247,000,000	$150,408,000	$397,408,000
Net income 1959	$ 60,700,000	$ 13,300,000	$ 74,000,000

Compiled from 1959 annual reports.

Rules Talks Set for Early July

Preliminary discussions on the railroad work rules dispute will probably be held during the first week of July in Chicago. Chief executives of four of the five operating brotherhoods propose meeting July 5, 6 or 7.

The four—Guy L. Brown, BLE; H. E. Gilbert, BLF&E; W. P. Kennedy, BRT; and J. A. Paddock, ORC&B—made the proposal in reply to letters from the carriers asking appointment of organization committees to negotiate on the rules issue. Their answer made no mention of committee selection.

Wednesday, July 6, appeared to be the most logical date for the preliminary session. Conceivably, the complex negotiations on the work rules dispute could make at least a beginning before the last of the wage disputes is settled.

As of last week, only two organizations—BLE and ORC&B—had reached agreements with the carriers on wages (the Engineers by arbitration, the Conductors by accepting the BLE pattern). Both the BRT and the BLF&E have received offers based on the pattern; the SUNA, arguing against application of the pattern to its own case, is winding up hearings before an emergency board.

Meanwhile, the ORT convention in Chicago provided a platform for several union leaders. G. E. Leighty, ORT president and RLEA chairman, took the industry to task for not going after business with sufficient vigor. George M. Harrison, president of the Clerks, rapped the non-op emergency board findings (RA, June 13, p. 9). Then came Mr. Brown, swinging along in his next-to-last month as BLE grand chief and as optimistic as ever that both the carriers and the employees can benefit from an updating of working rules. He made these points:

- Labor must make sure that "our agreements don't cripple the railroads or handicap them in the competitive

(Continued on page 13)

Watching Washington *with Walter Taft*

• **DEVELOPMENT BY RAILWAY EXPRESS AGENCY** of a sound basis for payments to railroads awaits repeal of what the ICC considers obsolete provisions of the 1916 Mail Pay Act. That's what the Commission has told a House Post Office and Civil Service subcommittee in supporting one of its pending legislative recommendations.

THE COMMISSION POINTED OUT that failure of Congress to act favorably on the recommendation could thwart implementation of REA's new agreement with the railroads. The agreement provides that the new plan for eventual payment to railroads on a car-foot mile basis is contingent upon enactment of the repealer —or of legislation to make the "obsolete" provisions inapplicable to express companies controlled by railroads.

THE "OBSOLETE" PROVISIONS are those which authorize the Postmaster General to ask the Commission for information as to railroad rates paid by express companies, and to demand rates on a like basis for transportation of mail, other than first class. Such requests have been made by the Postmaster General as maneuvers in various mail-pay cases of the post-war period.

THREE COMMISSION DENIALS—in 1949, 1954 and 1959—did not seem to deter the Postmaster General. So the Commission turned to Congress. Its recommendation for repeal was made first in its annual report for 1958, and repeated in its report for last year.

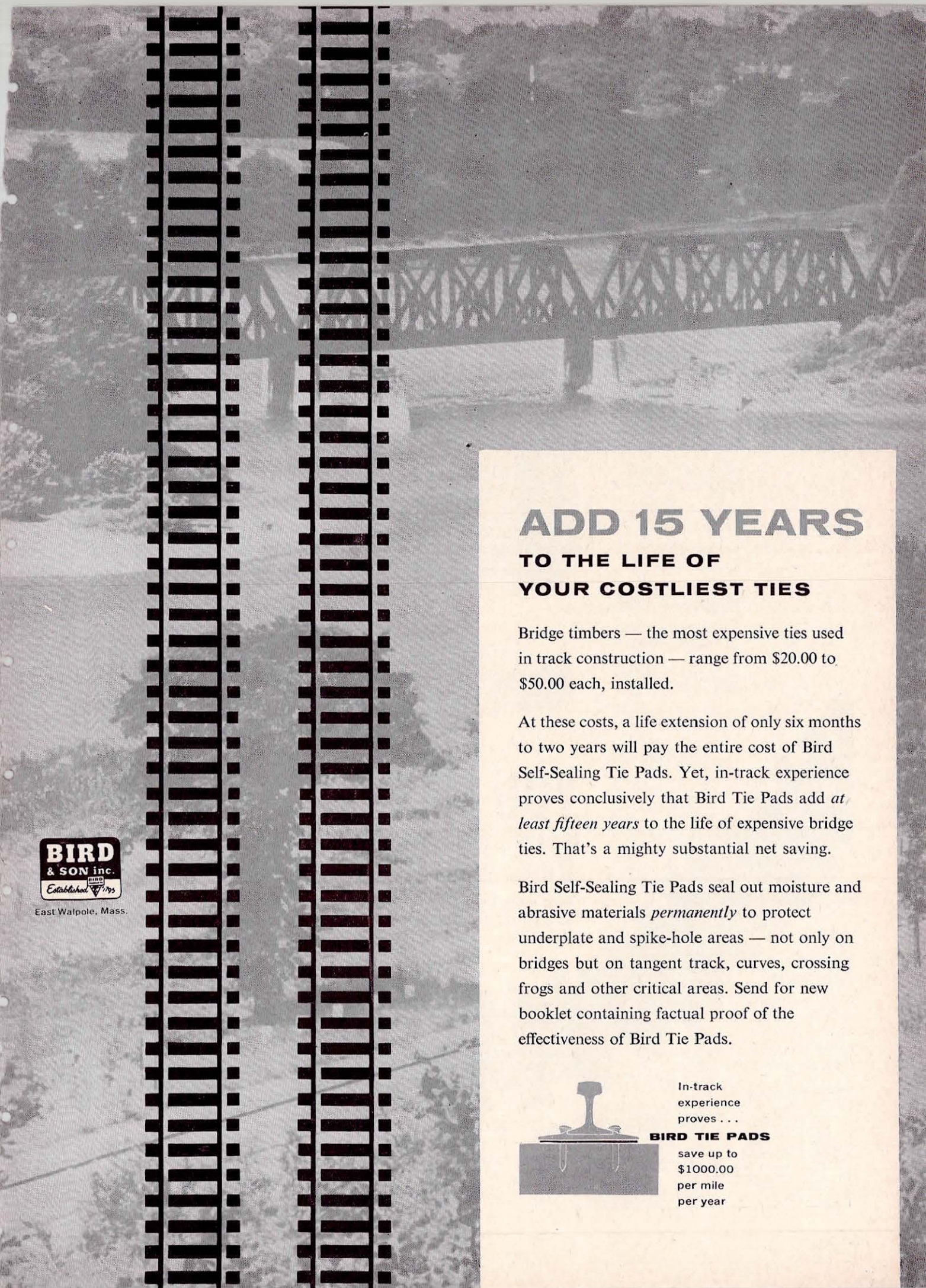
THE VIEW that the involved provisions of the 1916 act have become obsolete is in line with the railroad position. That position is that obsolescence came with transfer of the express business from the former private companies to "the railroads themselves" for handling by their "common agent"—REA. Thus, there are now no railroad rates for transportation of express matter.

• **TRACK-CAR BILL** has been sent to the Senate calendar by the Committee on Interstate and Foreign Commerce with a recommendation that it be passed. The bill, sponsored by the Railway Labor Executives' Association and supported by the ICC, would give the Commission power to prescribe rules for the operation of track motor cars.

THE REPORTED VERSION contains what the committee majority considers an anti-make-work provision, to which RLEA did not object. It stipulates that nothing in the bill shall be considered as requiring any minimum crew, or prescribing a crew on any track car involved.

A MINORITY REPORT came from two members of the committee—Senators Thurmond of South Carolina and Cotton of New Hampshire. They opposed the reported bill because it would still "open the door to featherbedding." AAR President Daniel P. Loomis has issued a like warning, saying any "anti-make-work" provision would be "utterly ineffective" as a cure for the "featherbedding inherent" in the bill.

• **RAILROAD EXPENDITURES** for new plant and equipment are now being made at an annual rate of $1.1 billion. The Department of Commerce's latest survey also indicates that the rate will be $1.2 billion for the July-September quarter, less than 1959's third-quarter rate of $1.3 billion. The 1960 rates, however, are otherwise above those of last year.



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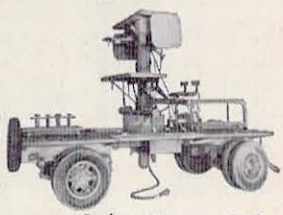

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Accounting Role Emphasized

The railroads are facing a new era—and railroad accounting officers have become an increasingly essential part of the management team in a period of high costs and shrinking profit margins.

E. S. Marsh, president of the Santa Fe, emphasized the point in addressing the annual meeting of the Accounting Division of the AAR in Chicago last week.

He called upon the delegates to "stimulate clear thinking among your friends and associates." He said that the new era of competitive transportation, accompanied by a severe inflationary spiral, presents grave problems and great challenges: "I believe I have never seen a time when we face so many uncertainties."

"Today," Mr. Marsh said, "we see on every hand that the failure of our government to adopt the plainly needed reforms recommended years ago is causing deterioration of earnings in the railroad industry and harming our efforts to take full advantage of modernization and technological improvements designed to give better service and keep costs to the public at the lowest possible level."

He added that while there was general agreement that something must be done about the "deteriorating railroad situation," the only reason Congress never came to grips with the problem seemed to be that "they had a feeling that nothing could happen other than the effect upon the railroad industry itself, and Congress has not seemed to worry too much about that."

Emphasizing that harm cannot come to the railroads without doing great harm to the whole economy, Mr. Marsh warned that it is a slow deterioration but, if allowed to follow its present course, it could have an end result that Congress and the whole country might wish to prevent—the eventual end of private ownership of the railroads, then of other agencies of transportation, and perhaps other businesses.

This is a time, said Mr. Marsh, "which demands good, clean, comfortable passenger service; that puts emphasis on fast, dependable freight service and intensified efforts to reduce cost of operation and maintenance; an era where we must recognize the inaction of Congress to give us fully adequate remedies to provide competitive equality with other forms of transportation; a keenly competitive era in which we must do more things to help ourselves—service-wise, rate-wise and cost-wise."

To attract more business and effect more efficient utilization of the railroad plant, he said, the railroads must provide a good service and competitive rates. "Costs for rate-making purposes should be realistic and forward looking, based upon the increased volume that could be attracted rather than upon statistics of the past without inclusion of that volume. Only in this way can the railroads achieve their full potential and the public receive the benefit of the most economical form of transportation."

Following the address by Mr. Marsh, the delegates began hearing and adopting reports of 11 standing committees. They also heard addresses by Wayne Irwin, vice president, AAR; and by C. J. Jump, senior vice president, Railway Express Agency.

Like Santa Fe President Marsh, Mr. Jump posed the problem of continuing deterioration of the situation leading to an end of private ownership. Talk of nationalizing transport, he warned, "is not just idle talk"—and the first real test may be occurring now with Railway Express, which is strenuously attempting to compete successfully with federally-operated and subsidized parcel post service.

Retiring Accounting Division Chairman W. G. Hunt, ATSF vice president and general auditor, told the delegates that "today, thanks to our modern office equipment and particularly to electronic data processing we have greatly reduced the volume of unskilled pick and shovel work in our accounting departments and we have constantly added to the activities requiring mental capacity and ingenuity . . .

"I think of these developments as upgrading our people so that our work is performed far more accurately and expeditiously than ever before.

"I have always thought of accounting as an art rather than a science. I admonish all . . . not to let themselves become complete conformists, completely pseudo professionals or scientists. Maintain self-respect and satisfaction in daily work. Never abandon that touch of the artist which must be in the make-up of any true accountant."

Officers elected for the coming year are: chairman, R. J. Wagner, comptroller, L&N, Louisville, first vice chairman, H. J. Ward, comptroller, PRR, Philadelphia; and second vice chairman, John A. Tauer, vice president and comptroller, GN, St. Paul.

CNR Highway Subsidiary Buys Five Trucking Companies

Canadian National Transportation, Ltd.—the highway transport arm of the Canadian National System—has completed stock purchase agreements with four trucking concerns and taken an option on a fifth. The purchases will extend CNT's highway services over an additional 15,000 route miles in seven provinces.

In announcing the new acquisitions, CNR Executive Vice President N. J. MacMillan emphasized that Canadian National Transportation is to be operated as a completely separate entity. Similarly, the trucking companies will continue to be operated as separate corporate entities. They will function within the trucking industry under the same ground rules as any independent trucker.

RULES TALKS SET *(Continued from page 10)*

race" with other forms of transport.

- This doesn't mean that unions should surrender hard-won gains. Engineers, too, have lost jobs in the postwar period and the adequacy of their protection is a matter of some concern. But while the organizations must strengthen and improve their agreements, they "can also enlarge [their] point of view . . . and consider what is good for the industry in the long run."
- Change and progress is the order of the day—and "revision is bound to come. . . . If we're intelligent enough and flexible enough, that revision will be wise and fair. . ."

C&O President Walter J. Tuohy underscored the need for management-labor cooperation. He told ORT delegates that the "leadership of John L. Lewis and his far-sightedness in encouraging progressive modes of mining have placed the American miner head and shoulders over his counterpart in other countries. . . . Although he has always fought tooth-and-nail for the betterment of his men, he has worked just as diligently in working with management for the advancement of the industry as a whole. I hope to see the day when the railroad industry, management, the brotherhoods and kindred groups will, likewise, walk down the path together to advance the cause of railroading to our common advantage."

Broader Outlook, Technical

► **The Story at a Glance: Technical improvements, factors to be considered in their adoption, and economic obstacles to wider use of modern equipment provided the subjects for debate and discussion during the AAR Mechanical Division and Electrical Section meetings in San Francisco.**

Topics ranged from diesel-hydraulic and coal-fired gas turbine locomotives to improved freight-car utilization.

The meetings also heard the SP's D. J. Russell emphasize the need for inter-departmental cooperation.

"Fourth-dimensional thinking," unencumbered by purely departmental considerations, was stressed as vital for railroad mechanical and electrical officers meeting in San Francisco last week.

Southern Pacific President D. J. Russell told a joint session of the AAR Mechanical Division and the Electrical Section: "Certainly you and other specialists in the various specifics of railroading have done well within the conventional dimensions of your particular jobs . . . The fourth dimension I speak of is that of thinking, not just in terms of the job itself, but in terms of how it relates to the over-all forward movement of the industry."

During technical sessions, both the Mechanical Division and Electrical Section took actions which gave evidence of the increasing inter-departmental cooperation which present-day railroad managements are fostering.

Problems of piggyback, high wheel loads, new locomotive designs and special car designs were typical of those considered. The bearing of each of these problems on more than one of the traditional departments was discussed in each case.

What is needed, Mr. Russell told the meeting, is thinking "that embraces a broader knowledge of the objectives and problems of the traffic people, the transportation people, the engineering people, and many others so that you can most effectively gear your work with theirs to the ultimate ends of attracting more business and building net profits.

"Use of cheaper fuels is an example of how the broader outlook must go beyond departmental lines. Viewed purely from a mechanical department standpoint, lower grade fuels on the SP have increased locomotive maintenance costs some $600,000 a year. But viewed in terms of the welfare of our company, these cheaper fuels are saving $2,600,000 in annual fuel costs. Even with the increased maintenance expense, there is a net annual saving of $2,000,000."

Application of the broader viewpoint by mechanical officers is necessary in numerous ways, Mr. Russell said. Greatest ultimate benefit for the company must be considered in each of the following:

- Careful study of over-all savings on projects for which capital expenditures are recommended.
- Elimination of property and equipment no longer utilized.
- Seeking of opportunities to broaden services into new forms of transportation.
- Seeking of new ideas from beyond the limits of the individual department, beyond the individual railroad, and beyond the railroad industry itself.
- Development of industry leaders who can move forward in the face of problems of ever-increasing complexity.
- Steady expansion of research programs.

Mr. Russell cited piggyback as a case where "a little ingenuity" has produced a great snowballing of business, either new or previously lost to highway car-

Motive Power Revolution on the Way?

Early in 1961, two new types of motive power will be on U.S. rails: The Southern Pacific and Denver & Rio Grande Western will each get three German-built, 4,000-hp diesel-hydraulic units; the Union Pacific will have completed its experimental coal-fired gas turbine locomotive (RA, Nov. 23, 1959, p. 9).

The diesel-hydraulics, ordered from West Germany's Krauss-Maffei, are 144-ton units developing 98,000-lb starting drawbar tractive force, with 33% adhesion. Power from two 2,000-hp diesel engines operating at 1,500 rpm is transmitted through fully automatic torque converter transmissions. The units will have hydro-dynamic braking similar to the electro-dynamic braking of diesel-electric locomotives.

SP President Russell says his railroad plans to test its units both in high-speed, heavy-duty freight service and in slower-speed mountain service. If the tests are successful, it is anticipated that similar units could be produced in the U.S. by domestic builders, according to the SP president.

The UP is building the coal-fired gas turbine locomotive at its Omaha shops. It will consist of a modified diesel-electric lead unit, the coal-fired gas turbine B unit, and a converted steam locomotive tender with a 54-ton coal capacity. In addition, the tender will carry 2,000 gallons of emergency oil fuel in its underframe.

The lead unit is a modified Alco 2,000-hp passenger diesel with freight gearing. The present control stand is to be replaced with a 20-notch turbine control modified for multiple-unit operation. The B unit will be the gas turbine unit which uses the carbody and running gear of a retired Great Northern straight electric locomotive purchased by the UP. Eight of the twelve axles will be powered.

The turbine will be one of the gas turbines presently used in a UP 4,500-hp oil-fired gas turbine locomotive. In event of failure of the coal-handling equipment, the gas turbine can be run at full power on oil fuel.

Progress Topics At Meeting

riers. The successful SP pipeline between Los Angeles and El Paso is another example of adapting to the changing needs of customers, he said. "Our employees as well as our stockholders have profited by construction of the pipeline. The contribution which the pipeline operation has made to overall earnings has helped us to stay competitive in many fields, and to draw other business to the railroad."

"I have no doubt," Mr. Russell concluded, "that with continuing expansion of the fourth-dimensional kind of thinking, we can share fully in the vastly expanding market for transportation services, and that we can do it at the fair rate of net earnings which we so urgently need to insure our future welfare."

"There could never be a more discouraging approach to car rental" than the present uniform per diem system, D. W. Brosnan, Southern vice president —operations, told the mechanical officers last Wednesday. The $2.88 daily rental for all types and ages of freight cars is a "tremendous brake" on efforts to provide proper equipment, Mr. Brosnan said.

He called for revision of the present system to give proper compensation for initial investment, capacity and the age of each car. Condition of the car, whether old or new, should also be a factor, he said.

The present uniform rental makes railroads keep out-of-date cars in service to recoup losses they incur by having modern cars interchanged. The $2.88 figure will not cover the ownership costs of such modern equipment as the hydracushion car or the aluminum covered hopper.

Mr. Brosnan urged increased car utilization and told of Southern efforts in this field. By arranging with an Alabama public utility for rapid unloading and consequent rapid turnaround, for example, the Southern is moving 5,000 tons of coal daily on a 140-mile haul with only 90 100-ton cars. The road estimates it would take more than 450 70-ton hoppers if this movement were handled in the traditional manner.

The new arrangement makes profitable a movement of a bulk commodity at a substantially depressed rate. Each car's revenue is $18,000 annually.

No other railroad expense approaches the cost of car ownership, Mr. Brosnan said, urging mechanical officers to intensify their efforts to get greater use and more equitable compensation for the U. S. car fleet.

For the first time, details of two new locomotive designs were revealed. Mr. Russell and S. M. Houston, general mechanical superintendent of the SP and chairman of the Mechanical Division, discussed the 4,000-hp diesel-hydraulic units which the SP and the Denver & Rio Grande Western have ordered from a German builder. Details about the coal-fired gas-turbine locomotive which the Union Pacific has under construction at its Omaha shop were disclosed by the Locomotive Committee. The UP locomotive is to be in service early next year.

Chairman Houston listed a series of problems on which the Mechanical Division has been placing great emphasis:

- Improved braking methods.
- Evaluation of lubricators as replacement for loose packing in journal boxes.
- Revision of AAR loading rules in loose-leaf form.
- Establishment of standards and interchange agreements for piggyback equipment.
- Simplification of AAR billing procedures.

Mr. Houston called on the Division to formulate minimum necessary working rules for safe operation of railroad rolling stock. These, he said, should be the foundation for a much-needed revision of the 1911 rules and inspection laws that are the basis for much of the present-day ICC equipment regulation. He said cooperation between the Division and the Interstate Commerce Commission has been excellent, but that regulations based on operations with steam locomotives in 1911 are unrealistic in the face of present-day operations.

At the concluding session of the Mechanical Division meeting, J. W. Hawthorne, chief mechanical officer of the Atlantic Coast Line was elected chairman of the Division. J. A. Welsch, general superintendent motive power of the Illinois Central, was elected vice chairman.

The Division also voted to consolidate ten of its technical committees into five in the interests of economy and simplification.

Greater reliability of diesel-electric locomotives is a goal toward which the Electrical Section must strive, W.D. Lamprecht, general manager of the SP, warned that group.

The problems of making electrical equipment more failure-proof, of finding ways to locate electrical troubles more quickly, and of striving for greater simplicity of design and standardization of parts on both locomotives and cars must be met, he emphasized. In the case of locomotives, if these problems go unsolved, the alternative could be the adoption of mechanical or hydraulic drives, Mr. Lamprecht said. "A basic consideration in the purchasing of the German diesel-hydraulic units for test was the frequency of electrical failures on our present locomotives," he concluded.

P.B. Burley, superintendent of communications and electrical engineer of the Illinois Central, was elected chairman of the Electrical Section.

J. W. HAWTHORNE

J. A. WELSCH

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Railroads provide Evans-equipped cars to shippers *at no extra charge*. Because Evans-equipped cars reduce damage claims and permit heavier loads, they are constantly in demand, and in use—which means greater profits for railroads and greater shipper satisfaction. Evans has a nationwide network of offices, with loading engineers who are ready to help shippers and railroads solve damage problems. For complete information, write Evans Products Company, Dept. E-7, Plymouth, Michigan.

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- **XAP Car Devices . . .** Specially fitted for damage-free shipments of automotive parts.
- **Coil Car . . .** A car specially designed to protect coils of steel from load shifting and weather damage.

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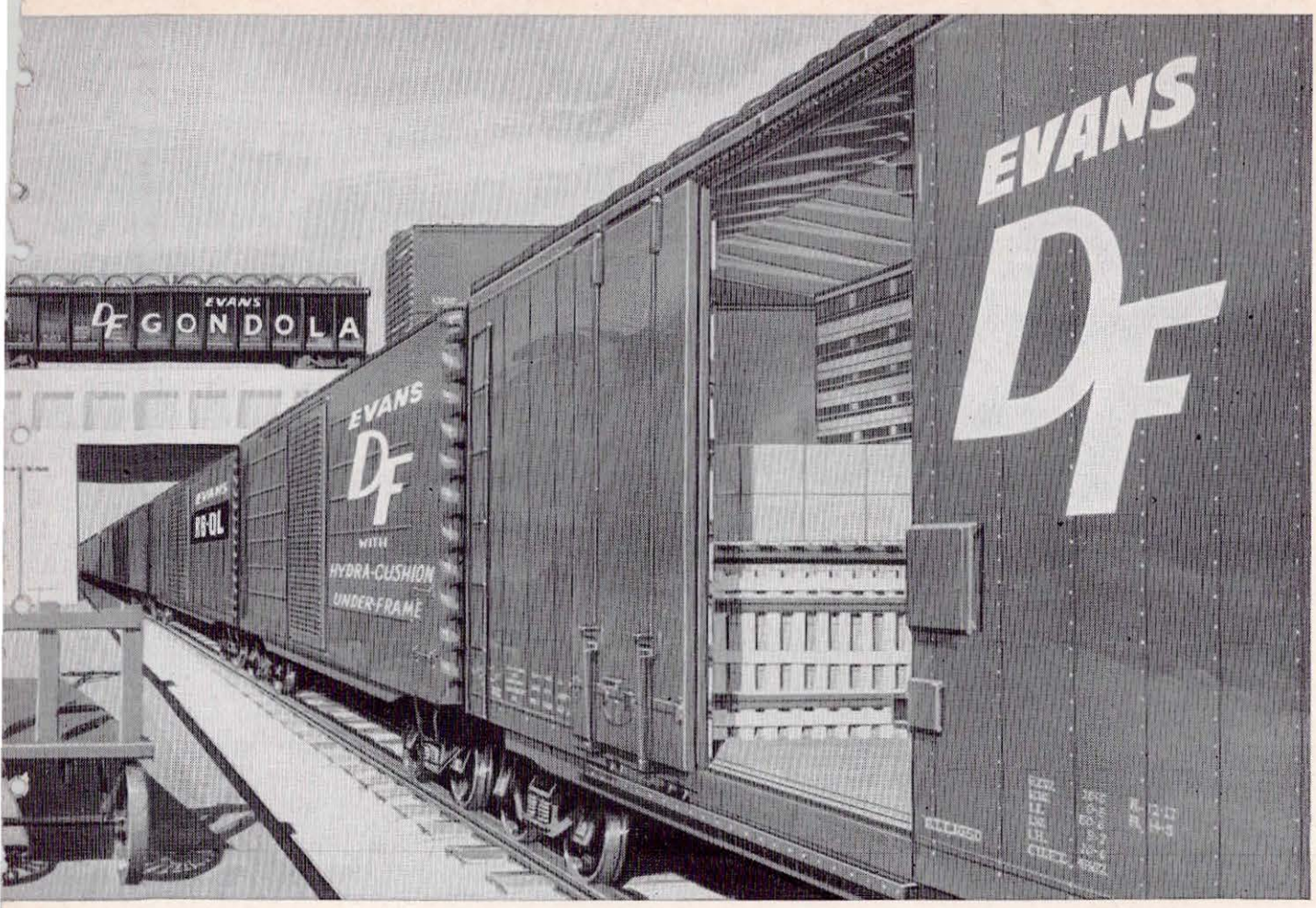
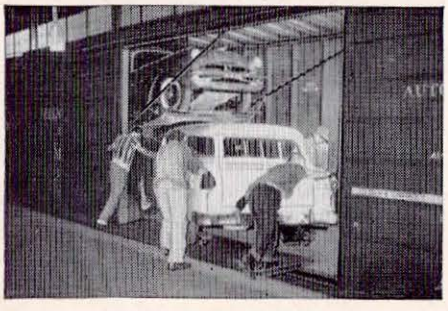
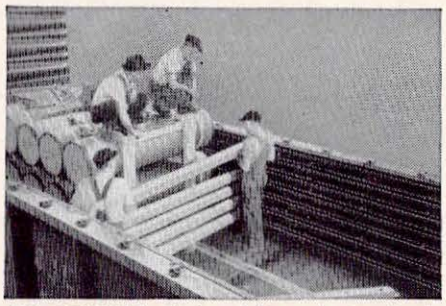


RAILROADS LOOK TO EVANS TO PROTECT LADING IN TRANSIT

DF LOADER—the "Kid Glove Treatment"® that locks in lading.

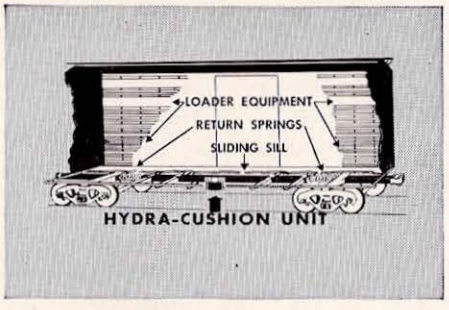
AUTO-LOADERT.M.—allows fast, safe loading of four automobiles per boxcar.





DF GONDOLA—designed for safe transit of extra-heavy industrial lading.

HYDRA-CUSHION UNDERFRAME—hydraulically cushions load, preventing damage.



QL® CAR MOVABLE BULKHEADS—are easily unlocked, lowered and secured tightly against load face.

EVANS
RR LOADING EQUIPMENT

Southern Plans Container Test

The Southern, which has thus far remained out of the piggyback parade, is now planning what its president, Harry A. DeButts, calls "a pilot operation," with containers on flat cars. As Mr. DeButts indicated at the road's recent annual meeting, Southern prefers the container-on-flat-car idea to the trailer-on-flat-car method.

Plans for the pilot operation are set out in a proposal (A5796) which has been docketed with the Southern Freight Association. They contemplate issuance of a tariff publishing all-freight rates for shipments in not more than two containers on a flat car between Atlanta, Ga., and Greensboro, N. C., and Chicago.

(According to industry sources, initial plans call for the use of Flexi-Van equipment obtained on per-diem rental from other railroads.)

In his annual-meeting statement, Mr. DeButts described the proposal as one designed to provide service for a "large shipper." He also said the Southern's experience with it "will determine whether to go farther."

These statements by the Southern president were in response to a stockholder's question which asked about Southern plans, "if any," for instituting piggyback service. Mr. DeButts' reply first recalled that he had stated at previous annual meetings that the Southern has a "completely open mind on the piggyback matter."

The reply went on to refer to how piggyback "has caught the public's fancy," and to the Southern's awareness of the "considerable volume" of freight now moving in piggyback service. He added:

"Our feeling is, and I think it is borne out by the experience of a number of railroads who went into this some years ago, that this so-called piggyback thing has been moving in the wrong direction and attention is now being shifted toward a container system—not on wheels, but containers, on flat cars, which could be put on trucks and delivered and unloaded and brought back to the railroad flat car."

Railroading After Hours with Jim Lyne

MELON SEASON AT HAND—Milwaukee agent Gustafson at Anamosa, Iowa, has relieved my ignorance, advising that watermelons are still being hauled in nice clean stock cars, as well as in reefers and ventilated box cars. My recollection is that the best watermelons there are (spherical in shape, dark green outside, and deep red inside) come from a place called Sand Springs, near Abilene, Kans. And, as for cantaloupes (called mushmelons where I come from), it is hard to improve upon the variety known as Rocky Fords. (I will withdraw this assertion on proffer of edible evidence to the contrary).

RR STAFF COLLEGE—The British railways have set up a staff college for middle management people—giving participants a 16 weeks' course of high level instruction in business organization, transport economics, human relations, and current problems of the British Transport Commission (which operates the railways). The college is housed in what seems to be a country mansion (judging from the picture in London's Railway Gazette), and is said to provide a "club atmosphere."

The set-up, particularly in the length of the course, is somewhat more extended than any parallel railroad program I've heard of on this side of the Atlantic—although similar refresher or "retread" education for management development is certainly no novelty with us. What we should do is provide this kind of schooling for the politicians. They are the people who manage the managers, and do so with no qualifying training whatever.

COSTS LESS BY RAIL—The man who drives into the "core" of a big city at peak hours pays less than 50% of the cost of the street and parking facilities provided for him—hence the community can afford to pay 50% of the cost of bringing the same fellow to town as a commuter by rail, instead, and be money ahead. So argues John Bailey of the Philadelphia Urban Traffic & Transportation Board in a letter I've just read, in the London Economist.

Being a political and economic right-winger, myself, my feeling is that a better answer to this arithmetic would be to require the autoist to pay 100% of the cost of what he gets. If you did that, then it ought to be possible to charge the rail commuter 100% of the service's cost without chasing him away. So much for simple logic. But when politically minded people ask how you can induce voters to let you levy 100% of the cost of highway use on highway users—the answer doesn't come easily. Our system of highway finance has seduced people into socialism. How do you unseduce them?

A CHAPTER OF ERIE—The old "Grand Opera House" in New York—once the headquarters of the Erie Railroad, and the shenanigans of its then buccaneering management—is going to be torn down to make way for a housing development. In recent years this old theater, a symbol of grandeur a century ago, has served as a second-rate movie house. Jim Fisk, the road's high riding vice president back in the 1870's, used the premises not only for business, but also as a place of entertainment—until his escapades aroused animosities which led to his murder.

Knowing the Erie as I have in recent years—under the management of such high-minded gentlemen as Bob Woodruff, Paul Johnston, and Harry Von Willer—it's hard for me to imagine it as it was in the swashbuckling days right after the Civil War.

Some people like to ascribe a personality to a corporation—including the present generation in either praise or blame for the deeds of its predecessors. I've never gone along with this notion. I think each generation's reputation should be based on its own actions, neither being credited for its predecessors' accomplishments nor abused for their sins.

Roller or Solid?...a bearing specialist's answer

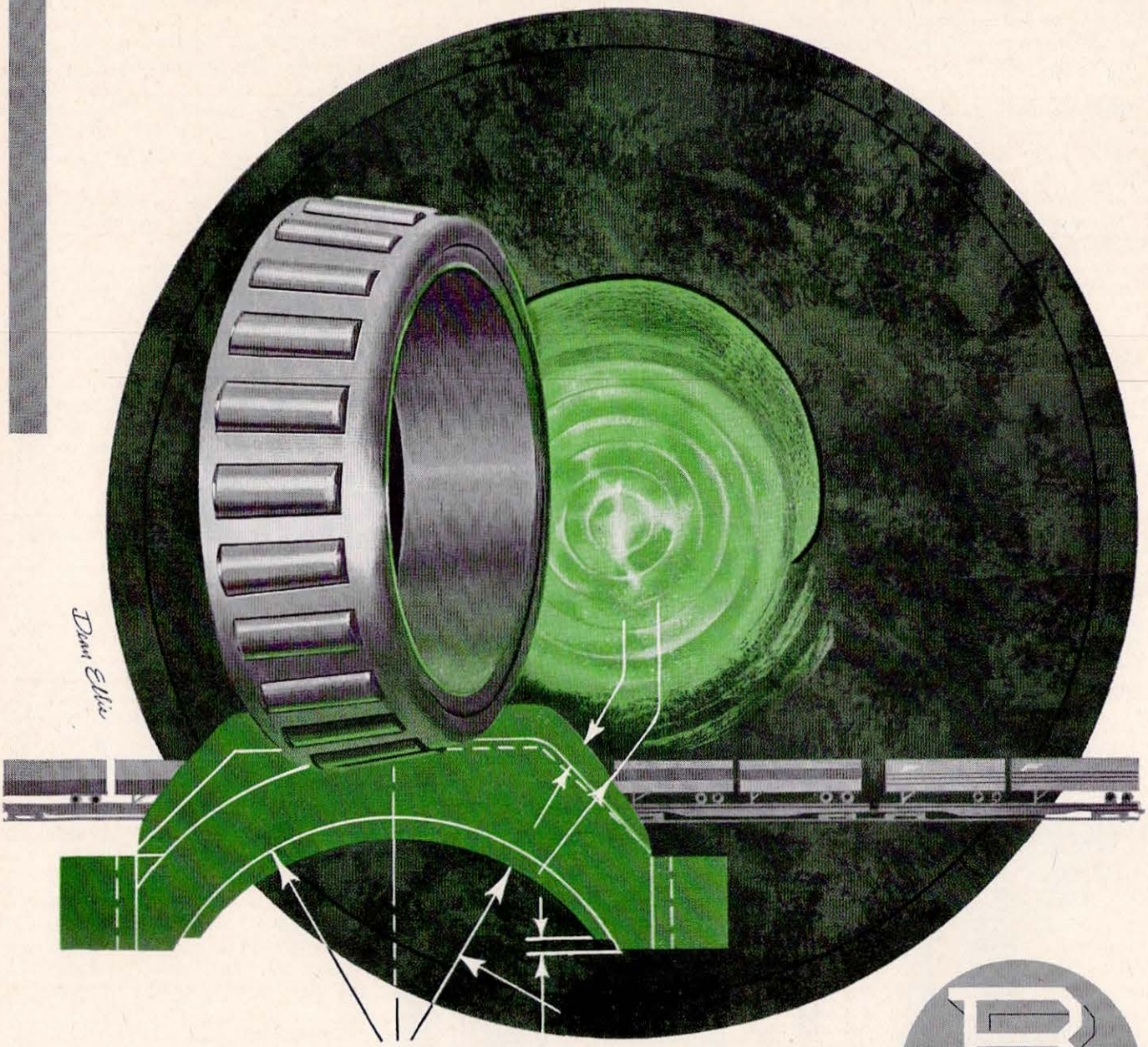
Our belief is that *both* bearings have a job to do.

In general...as much new equipment as possible should have roller bearings – particularly, fast-freight, high-mileage cars. The roller bearing is the only *final* answer to the hot-box.

On the other hand, solid bearings will be needed on existing equipment for many years to come. Low in cost and rugged, they give excellent service.

For these reasons Brenco is the only manufacturer who makes both types and specializes exclusively in railroad bearings.

Brenco bearings...more than a million in service!



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BRENCO
BEARINGS

Re-Dieselize and Save Money

► **The Story at a Glance: Did dieselization and the virtual elimination of steam power clean up the last great area for sweeping economies in railroad operation? Perhaps—but the locomotive builders think perhaps not. And they aren't looking any farther than the motive power situation to find the promise of new economies.**

At least one builder—GM's Electro-Motive Division—sees a potential for savings comparable to those realized in initial dieselization. EMD's angle: Re-dieselization—the replacement of existing locomotives with more powerful, more economical units.

Over the past year and a half, about 120 1,350-hp FT units have been turned back to Electro-Motive's La-Grange, Ill., plant on latest model, higher-horsepower locomotives.

Milwaukee has taken delivery on 52 1,750-hp GP9s to replace an equal number of FTs. Missouri Pacific is turning in 24 FTs for a like number of GP18s. Great Northern has replaced 18 FTs with 2,000-hp GP20s. And Santa Fe, which took delivery on its first EMD FT in January 1941, is acquiring 25 GP20s to replace part of its FT fleet.

Locomotive replacement—EMD's big hope for the domestic market—is based largely on a determination of the economic life of diesel-electric power now in service. And economic life involves two primary considerations:

- Advances in locomotive development since purchase of the older units in question.
- Factors related to individual road's power status—their need for additional capacity, their major overhaul scheduling, their desire for improved performance at lower operating cost.

EMD freely concedes that the practical life of a diesel could be 100 years or more, assuming consistent maintenance and proper operation. But the builder sees advantages in its replacement program that outweigh any advantages a railroad might obtain by running the wheels off existing power.

M. H. Gardner, assistant general sales manager of Electro-Motive, puts it this way: "All we're talking is a replacement plan. As to how it fits individual railroads, that's up to them, up to their planning. What we have is a way to get the old locomotives turned in and a way to start earlier than you might expect to get the economic advantages of a new machine . . . We look on this as the future of the domestic locomotive business—not entirely, but principally."

Replacement advantages, according to EMD, fall into three major categories:

- Added capacity. Three GP20s will do the work of four 1,500-hp F3 units, a 33 1/3% capacity increase, unit for unit.
- Fuel economy—estimated at a 7½% improvement in specific fuel consumption.
- Reduced operating and maintenance costs. A major factor, of course, is that the GP20 is a new unit and the FT or F3 turned in may be working close to its second (or third) major overhaul. But, of equal importance, design changes have developed a product with components that require less attention, and the buyer benefits from what EMD terms reliability improvements.

Cost advantages, the builder points out, become more important if a road needs no actual increase in capacity. Here, three units will replace four and do the same work at less cost. Maintenance of one unit is completely eliminated.

"Within five years," Milt Gardner comments, "a railroad can have a replacement unit pay for itself, based on the cost of a new unit against the cost it's facing up to on the old unit . . . The return on investment is comparable to the return on replacement of steam with diesel—or it may even be better."

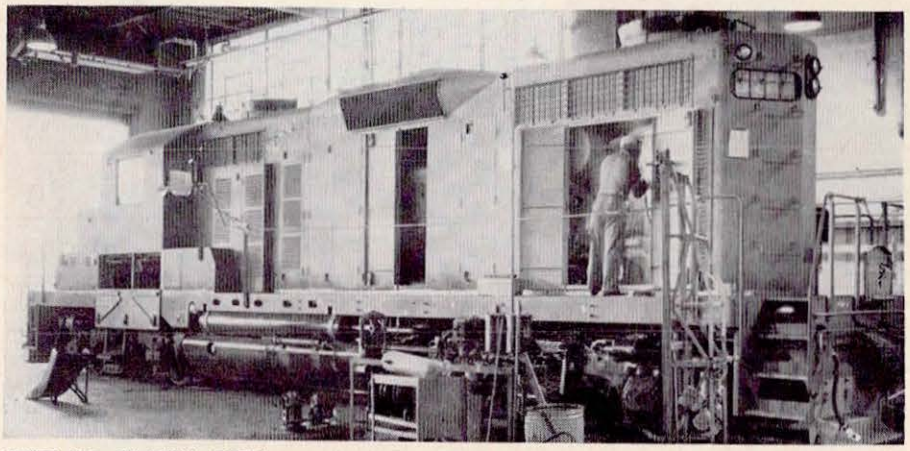
What does a railroad get in a replacement unit? "A new locomotive, containing a few long-life pieces from an older unit, remanufactured and modernized. The replacement is built on the new-locomotive production line."

Components fall into three groups in the replacement plan:

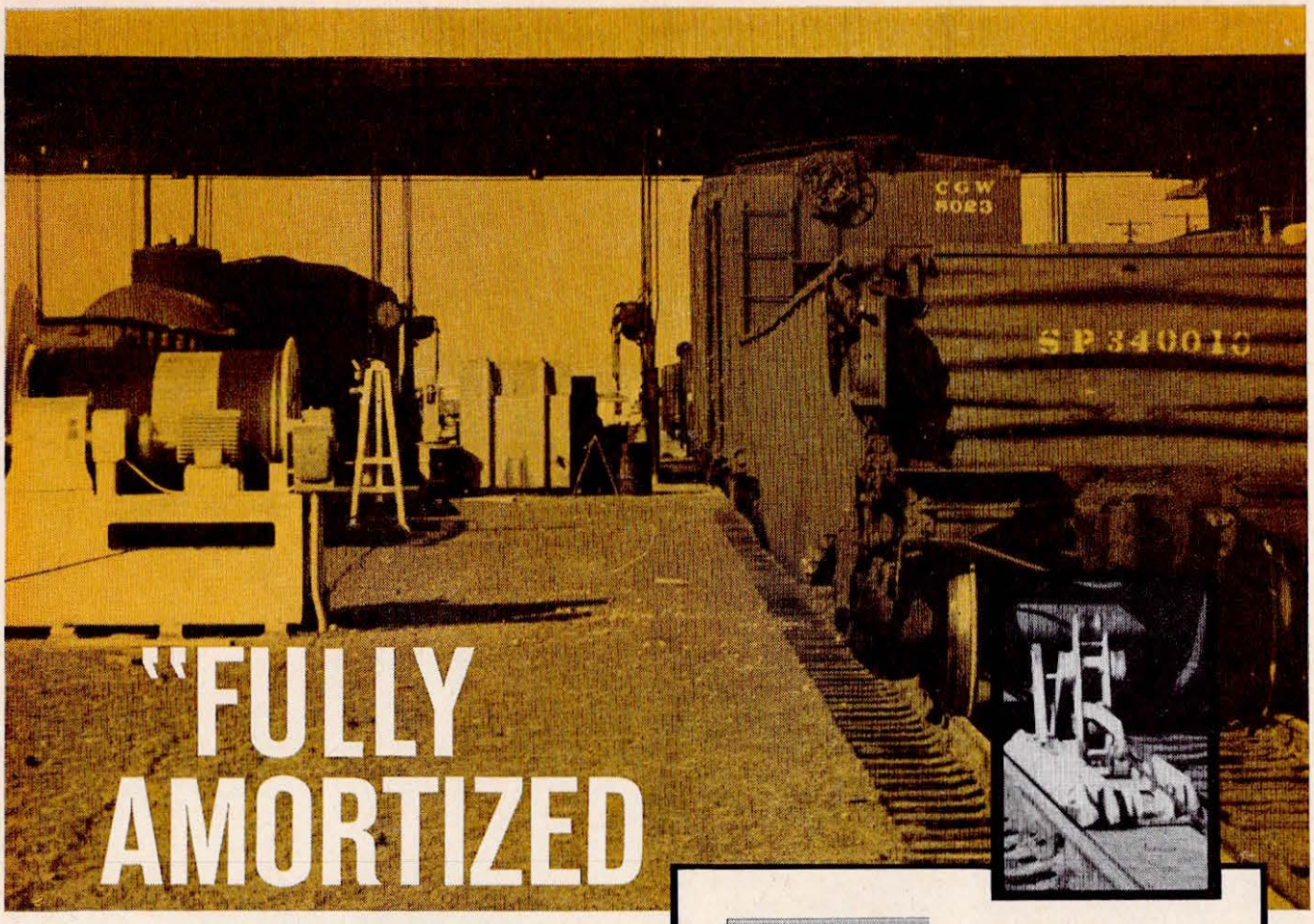
- Those which are always reused —truck frames, or certain parts of the main generator (frame, armature core), for example.
- Those which are always installed

(*Continued on page 24*)

CUT-DOWN FRONT HOODS are "extras" on all of the 25 GP diesels ordered by Santa Fe under EMD's replacement plan.



ONE OF SANTA FE'S new 2,000-hp GP20 units undergoes final testing.



"FULLY AMORTIZED IN 18 MONTHS"

Operating experience is demonstrating the significant scope of cost reductions now possible in car repair work.

Increased Efficiency —

at least 100% over methods previously used.

Profits on AAR Billings —

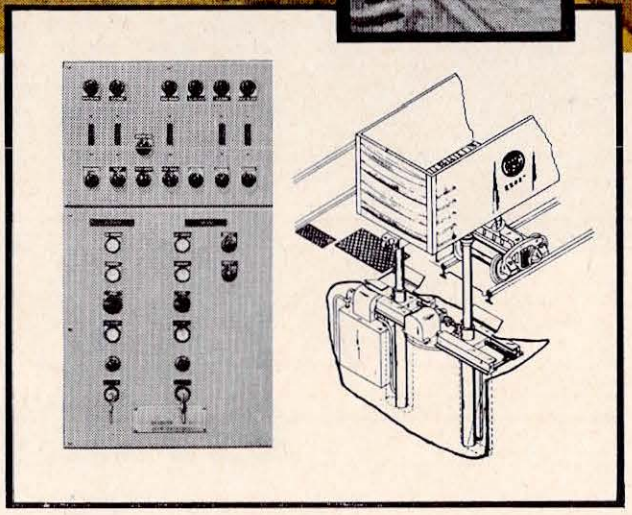
"Three times as many AAR Repairs," one railroad reports.

Reduction in Per Diem Costs —

Bad order delays have been reduced from 34 to 12 hours.

50% to 90% Savings in Switch Engine Hours.

May we discuss the Spot Car Repair System with you . . . or send a new, detailed 6-page bulletin?



Rabbits for car handling. **Pushbutton control,** all operations, from a centralized panel for each track. **Jacking,** accomplished hydraulically by traversing (illustrated) or fixed jacks — power for all jacks now from a single pumping system.

RMC **Spot Car Repair System**

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35 YEARS OF SERVICE TO THE RAILROADS 1925-1960

System Covered by Patents Applied for

Car body is cut free from underframe and old side sill angle reinforcement removed. Cars require new interiors and heavier underframe reinforcements.

Car body is lifted free of underframe to facilitate extensive underframe repairs.

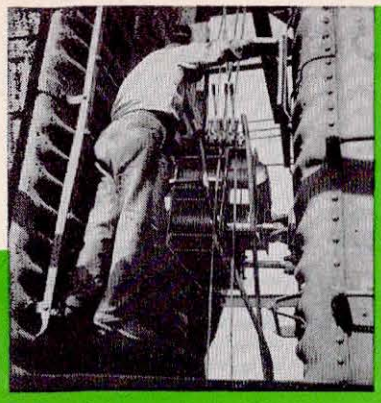
HEAVY REPAIRS at GREENVILLE

Upgrade Cars for Select Loading . . .

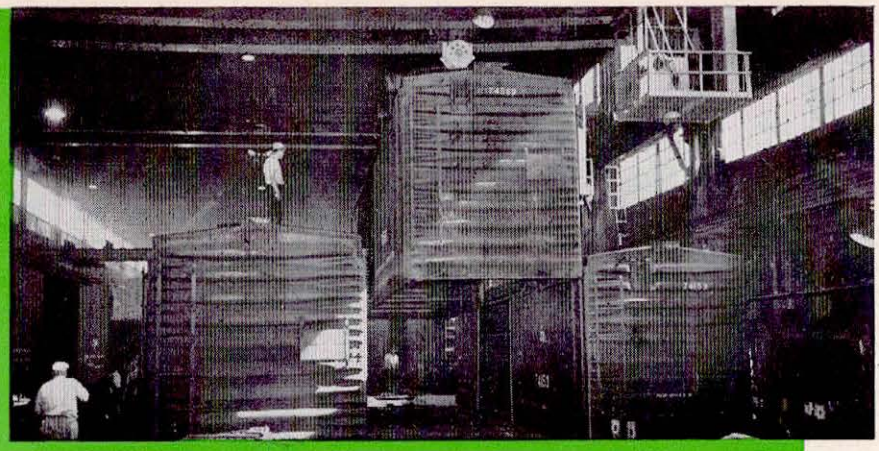
THE GREENVILLE STEEL CAR

These 50′ 6″ boxcars are now back in revenue service with reinforced underframes, new floors and loading devices. The pictures highlight the Greenville assembly-line techniques employed. They're different . . . perhaps the first of their kind.

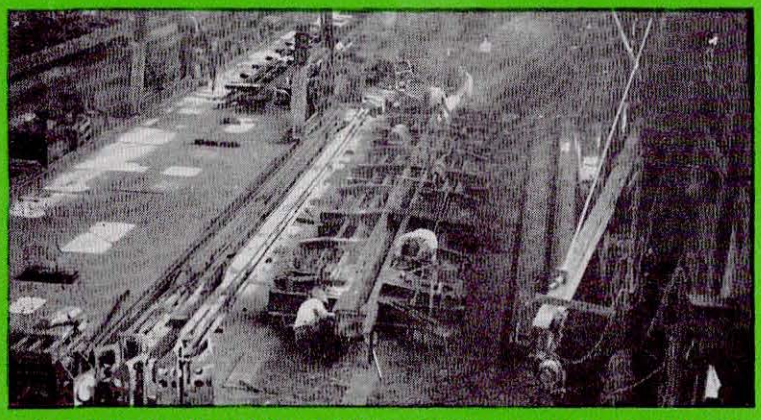
As carloadings increase, you'll want your cars on the job earning dollars. Greenville can do the heavy repair jobs and keep your shops free for running repairs. Put Greenville to work planning and scheduling your needed heavy repairs . . . getting your car fleet ready to roll. Now's the time to get started. A single phone call clears the track.



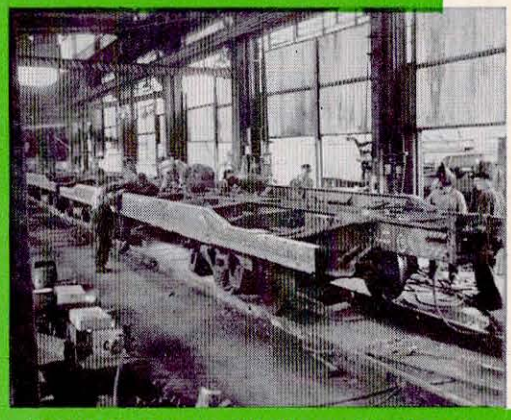
Car body ends straightened hydraulically.



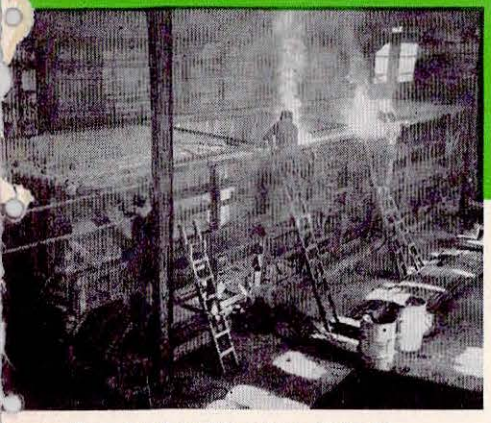
Bodies are stored in shop area and are replaced on original underframe and trucks.



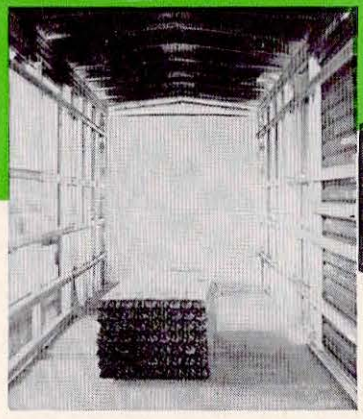
Underframe is clamped to special jig, straightened, bolsters leveled and necessary repair welds made.



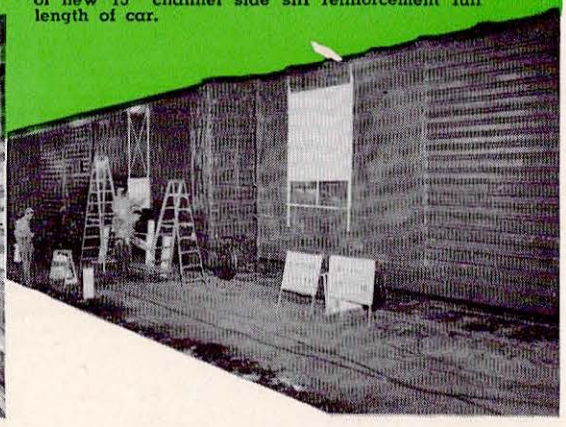
Underframe on assembly line upside down to complete riveting and inspection. Note addition of new 15" channel side sill reinforcement full length of car.



Down-hand welds secure body to underframe.



New floor, end lining and loading devices installed.



Completely repainted and ready for stenciling, the cars are on their way back to revenue service.

NEW CONSTRUCTION HEAVY AND LIGHT REPAIRS LEASING

GREENVILLE

STEEL CAR COMPANY

Subsidiary of Pittsburgh Forgings Company

GREENVILLE, PENNSYLVANIA

48 Years of Experience

new, regardless of condition of the old part.

● Those which are installed new if required—depending on condition of the old part.

The resulting unit carries a new-locomotive warranty and may be financed through any of the conventional financing methods.

What's the potential for replacements? Excellent, judging from the accompanying table, which shows the relative age of EMD power delivered to the railroads. But the economics of replacement are going to be strictly up to the individual railroad to decide—depending on size and age of the fleet, the overhaul cycle, the pace of original dieselization.

EMD doesn't figure, for example, that a road which bought 100 FTs within a few months' time in the 1940s is going to convert to GP20s in the same short period. Some roads may prefer to scrap old power and re-dieselize with all-new units of maximum horsepower. A number of roads won't be ready for replacements for some time, regardless of how they go about it.

Illinois Central, for example, has no freight power older than its GP7s; average age of Norfolk & Western's 529 units is 2.5 years.

Trend Is Clear

The table shows almost 1,100 FTs and 1,804 F3s built during the years 1940-49. All are under 20 years old, but the entire group of FTs is more than 15 years old. EMD expects replacement of these units will make up the greater part of its business within three years. The trend is already pronounced—in April this year every general purpose and switcher locomotive turned out by Electro-Motive for the domestic market was a replacement for an old model turned in.

Still untapped, but coming up within the next five to 10 years, is the potential replacement of 1948-52 power—and those years were EMD's major production years.

Emphasis generally will be on freight power and on the workhorse GP20 as "the" replacement unit. It's possible for a railroad to turn in passenger power and yard units for replacement, but the potential is light. Yard power, EMD points out, operates at a low load factor; it's generally set up on a 25-year depreciation basis; there's less prospect of developmental changes shortening economic life; and there isn't the potential to use added capacity to reduce the number of units in service.

But if replacement becomes the major item Electro-Motive thinks it will, both railroads and builders will owe a debt to the lowly yard engine for showing the way: Replacement as EMD views it, really started with the 201A-series switchers, which have been coming back quietly and without fanfare for about 10 years in exchange for higher-horsepower yard units.

Through the years in the evolution of the replacement plan, unit improvement has gone by many names—rebuilding, remanufacturing, upgrading, power renewal, among them. Method of improvement has varied—but the program has been held together by a factor which has run through EMD design since before the LaGrange plant was built: "Our components have kept capacity ever-increasing within the same physical perimeters."

The practice has been to build more capacity into equal-size components—which makes it possible now to take an old component and completely remanufacture and modernize it to 1960 standards, then re-install the part in the same space it originally occupied.

Naturally, with certain parts of the old unit reusable, the railroad turning in FT or F3 units on GP20s gets a price break—an advertised 10% off the cost of the new unit, plus allowances for the remaining value in the turn-in unit. The plan is set up to a point where EMD "can pull out of a locomotive the equivalent of its remaining depreciated value and apply it to a new unit . . . and then set up a new base line from which to measure the economic life of the locomotive."

Here repair costs—and cost potentials—play a vital part. The newest of the FTs (1945 vintage) are approaching second-overhaul status, figuring a major overhaul every seven to eight years. Each overhaul brings costs down immediately, but they soon start up again to higher levels. Replacement shortly in advance of second overhaul, EMD figures, will enable railroads to (a) avoid the major expense of one overhaul; and (b) start with a new locomotive that costs significantly less to maintain.

Backlog Is Ample

Many roads won't be ready for replacement power for some years to come. But the 178 FTs already turned in for GP units give the replacement plan a solid base on which to grow. The rest of the FT fleet, plus the F3s dating back to 1946 and the hundreds of F7 and GP7 units turned out in the early 1950s, provide an ample "backlog" on which the plan can operate over the next 10 years. (The biggest single power grouping, 3,721 F7s, will reach age 15 between 1964 and 1968).

Through last April 30, Electro-Motive had taken in 390 older locomotives and replaced them with modern power. The largest single group has been FTs—178 have come in and have been replaced by GP9, GP18 and GP20 units. The list also includes turn-ins of four F2s for GP9s; 39 F3s for GP9s; and 17 F7s for GP9s and GP18s (plus a variety of switcher, passenger and F-type units totalling 152 replacements.)

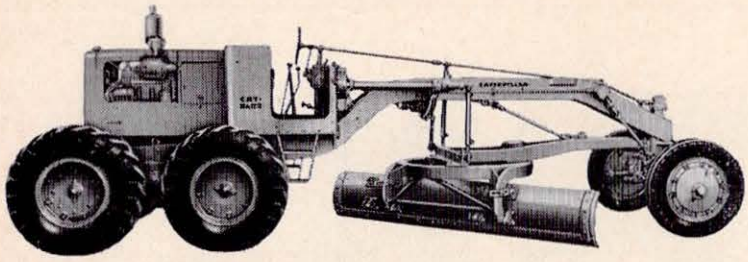
Dieselization seems to have run its course. From now on, barring introduction of a superior mode of power, the future (for builders and railroads, as EMD sees it) lies in consistent improvement of the species. And that connotes locomotive replacement.

Number of EMD Diesels Delivered to Railroads—1941-1953

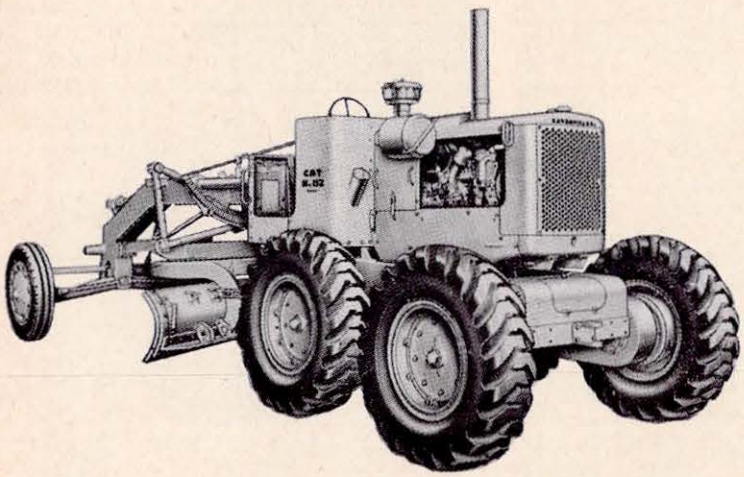
Model	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950*	1951	1952	1953
FT	47	96	184	500	267	.....	.....	.....	.....	.....	.....	.....	.....
F2	.....	.....	.....	.....	.....	104	.....	.....	.....	.....	.....	.....	.....
F3	.....	.....	.....	.....	.....	111	608	899	186	.....	.....	.....	.....
F7	.....	.....	.....	.....	.....	.....	.....	4	934	1,023	874	661	225
BL	.....	.....	.....	.....	.....	.....	.....	37	22	.....	.....	.....	.....
	47	96	184	500	267	215	608	940	1,142	1,023	874	661	225

*Production of the GP7, first of the road-switcher designs, began in 1950.

NOW! 3 NEW SERIES CAT MOTOR GRADERS . . .



85 HP No. 112E



100 HP Turbocharged No. 112F

115 HP No. 12E

Big improvements in design and power keep each of these Motor Graders out front in its class!

New, compact engines . . . incorporating the latest in metallurgy and technology . . . provide greater lugging ability in tough going, easier servicing, high production and long life. Other important features effective with the new series are the vertical starting engine, for all-weather starting . . . the dry-type air cleaner, removing 99.8% of airborne dirt, cutting maintenance time . . . as well as other important changes. The oil clutch . . . long a big feature on the No. 14 and No. 12 . . . now becomes standard on the new series No. 112s. A Caterpillar exclusive, the oil clutch provides up to 2,000 hours' service without adjustment. Excellent operator visibility, smooth mechanical blade controls and ample throat clearance are other retained features now standard throughout the line. *Quality* features designed towards dependability and greater performance.

Contact your Caterpillar Dealer for more information on the new Motor Grader that best fits your railroad job: the established 150 HP No. 14; the new series No. 12E and the No. 112E; or the latest addition, the Turbocharged No. 112F. He will point out the new features that interest you most, or set up a demonstration on your job. Dealer outlets, located conveniently throughout the country, practically eliminate the problem of parts and service. Another plus feature, when considering Caterpillar!

Caterpillar Tractor Co., General Offices, Peoria, Ill., U.S.A.

CATERPILLAR

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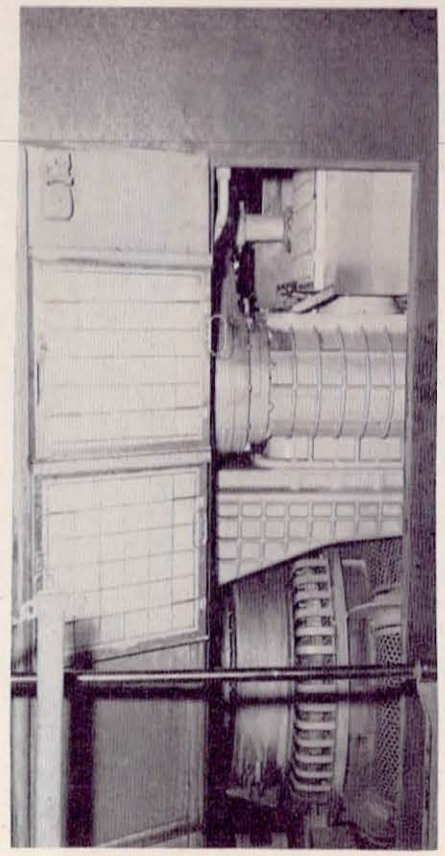
MODERN HEAVY-DUTY MACHINES TO FIT ANY JOB!

New Products Report

New Data Processors

A small computer, the 301, and a large one, the 601, have been introduced by RCA to complement the medium sized 501 now in service. All are completely transistorized. The 301, designed for small or medium size organizations, features a "juke box" memory unit holding 128 magnetic recording discs for a capacity of 4½ million data characters. The discs may be rapidly interchanged or erased. Up to five disc files and 12 tape stations may be used. The 301 data processor can incorporate up to 20,000 characters in its core memory. The large 601 computer is suitable for both business and scientific applications and is capable of handling the paperwork of the largest corporation. On the 601 a combined input-output data rate of up to 50,000 words per second can be achieved, with a memory cycle of 1.5 millionths of a second. An expandable modular design is also featured which allows expansion of speed, capacity, or function. *Radio Corporation of America, Dept. RA, 30 Rockefeller Plaza, New York 20.*

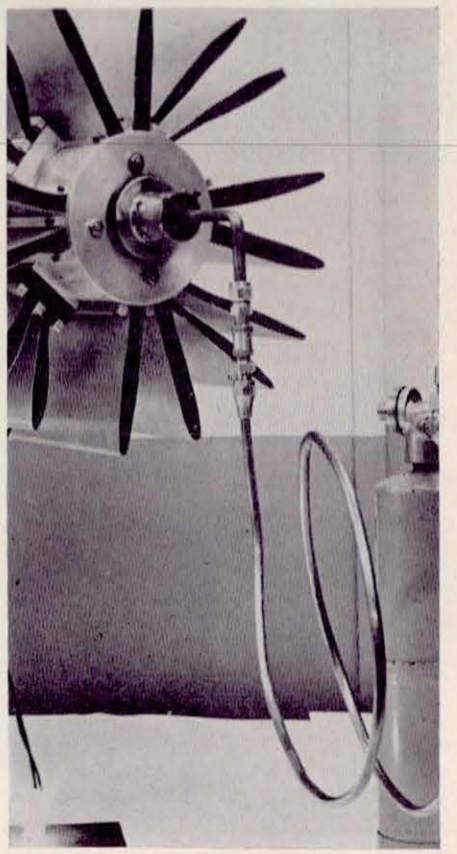


Glass Fiber Air Filter

The AMER-kleen filter is a replaceable glass fiber air filter for diesel-electric engine intake, carbody and main generator applications. The filtering media has progressively increasing density from air inlet side to air outlet side, which, the manufacturer says, permits the filter to trap dust and dirt in every part of the pad.

According to the manufacturer, pads are made from continuous interlaced fibers to provide high tensile strength and to eliminate the possibility of glass particles blowing out of the filter into the engine. Pads use a special gel-type adhesive to retain dust and other loose particles. A simple visual check tells when pads need to be replaced.

Use of the replaceable filters is said to offer economies in several areas: Replacement of pads is less expensive than maintenance of metal filters; filter cleaning equipment can be eliminated; efficiency of the units contributes to lower engine maintenance costs. *American Oil Filter Company, Inc., Dept. RA-PD, 215 Central Avenue, Louisville 8, Ky.*

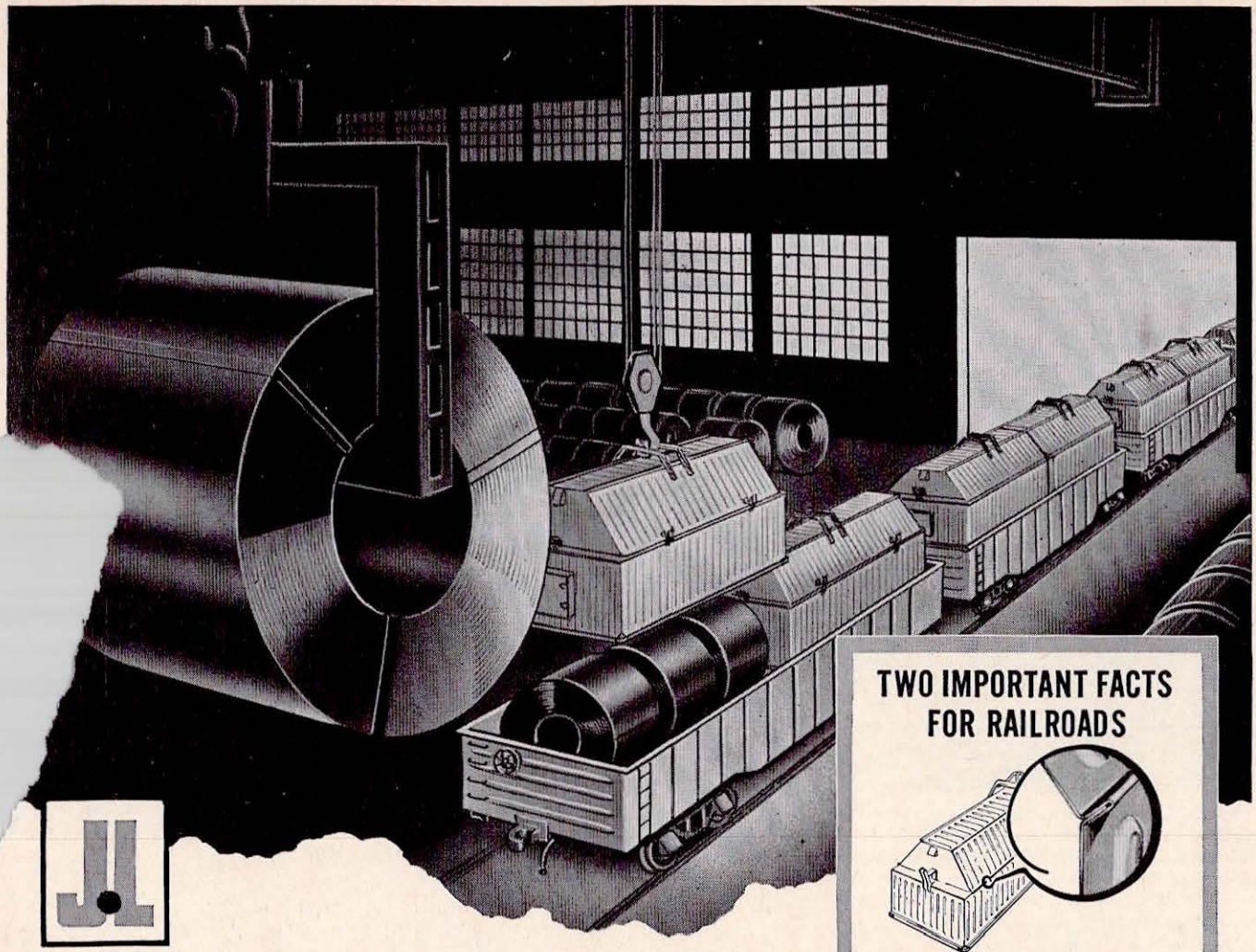


Thermoelectric Generator

A 10-lb power plant uses propane gas to produce electricity. The unit develops 10 watts, rated at 3 or 6 volts dc, but this can be stepped up to 10 volts or higher with a converter. Semiconductors convert the heat of the burning propane into electricity. It was designed to run a year on 200 lb (50 gallons) of propane gas. The power plant is 12 in. high. *General Instrument Corp., Dept. RA, 65 Gouverneur St., Newark, N. J.*

Cement Car Cleaning

A method of cleaning cement bottles and covered hopper cars uses, basically, the Ripco portable air caddy with its vacuum suction unit. It is powered by a 32-hp gas engine. Cement is sucked out quickly and without dust through a 4-in. suction hose inserted into the bottle or hopper. The manufacturer says it is possible to clean 10 barrels of old cement out of a 5-bottle car in 12 min. *Ripco Air Systems, Inc., Dept. RA, 251 S. Third St., Oxford, Pa.*



YOCAR HOODS HELP J & L SOLVE SHIPPING PROBLEMS

Use of Yocar hoods on shipments of high quality steel coils provides savings of "$25 to $30" per car loading according to JONES & LAUGHLIN STEEL CORPORATION, ALIQUIPPA WORKS DIVISION, ALIQUIPPA, PA.

Costly dunnage and paper wrappings are eliminated — damage claims show drastic reduction — and the perfectly balanced YOCAR HOODS permit easy positioning with minimum manpower. Positive protection from weather, dirt and vandalism is also provided.

Helping you **SHIP SAFELY AT A SAVINGS** is YOCAR'S goal. Why not do something about your profit-reducing shipping problems? Specify YOCAR protection next time you ship by rail.

OTHER YOCAR SAFETY DEVICES	**Safe-Cargo Anchor Rails for piggy-back trailers**	**Yocar Safe-Cargo Econo-Guard increases car wall life**
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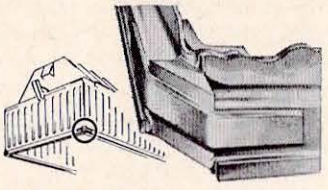
YOCAR

YOUNGSTOWN STEEL CAR CORPORATION • NILES, OHIO

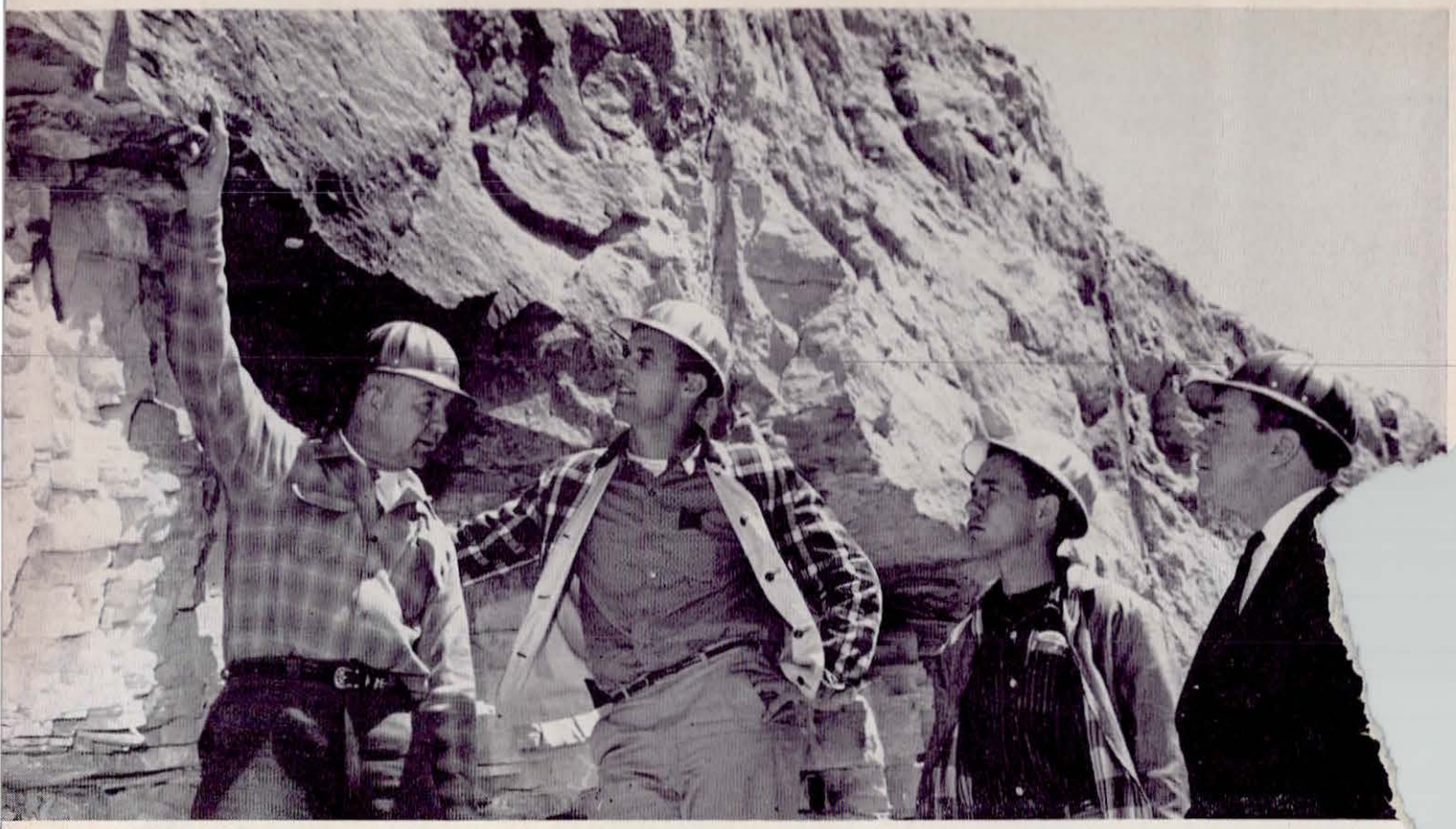
TWO IMPORTANT FACTS FOR RAILROADS

SEAM-LOCK construction eliminates upper welded seams, where water accumulates, insuring weather-tight protection throughout the hood life. Added strength to the entire hood is achieved due to the rigidity and durability of SEAM-LOCK'S design.



CORNER-STRENGTH . . . A new corner construction makes YOCAR hoods the strongest and best constructed hoods available today. Double backing on each corner insures longer service life, for it is here that gondola hoods take the most constant beating from humping and shifting in transit.

Send for new catalog today and see how Yocar can help you solve your shipping problems.



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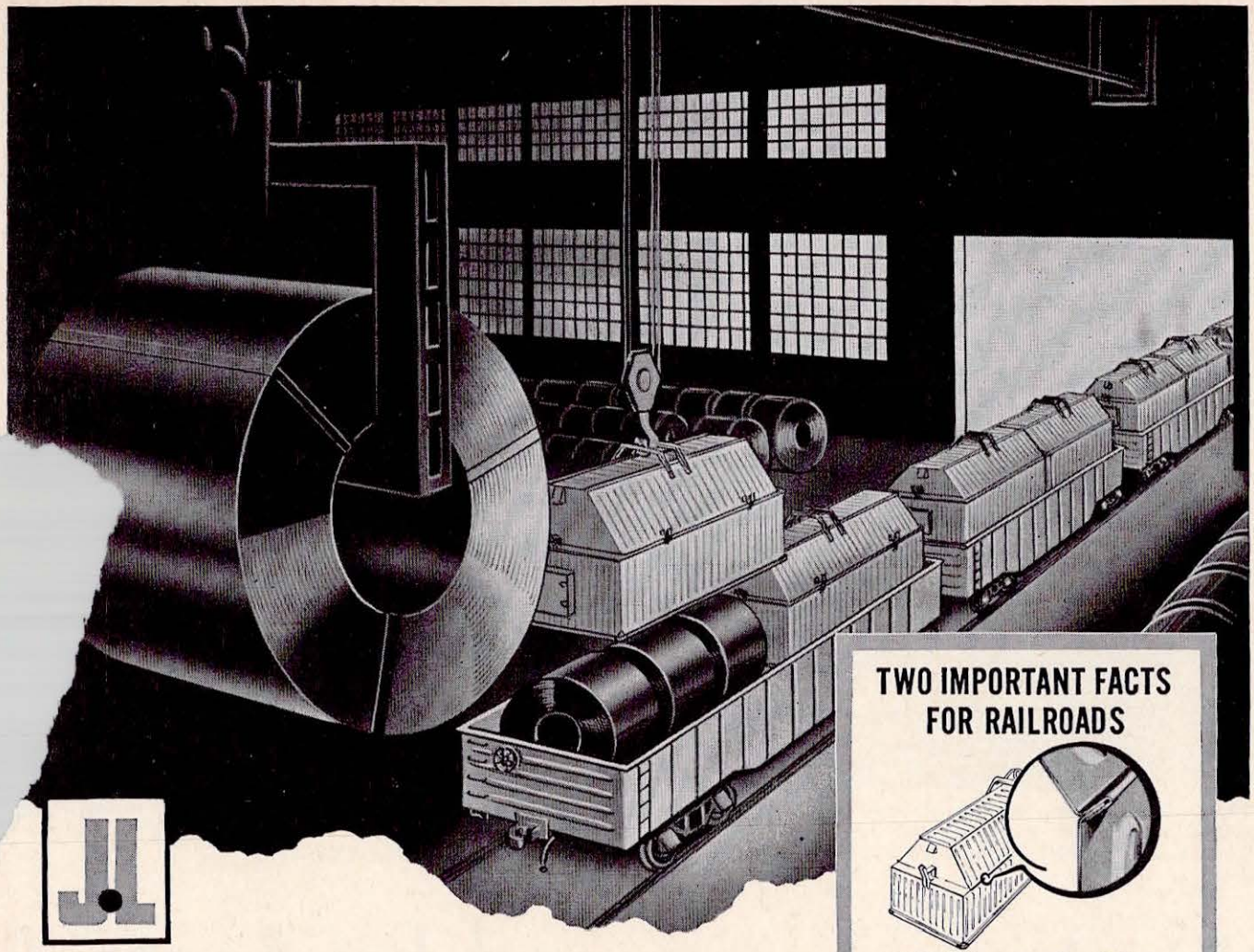

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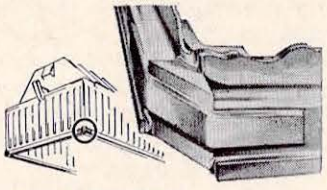

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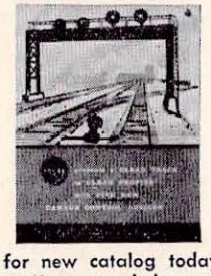

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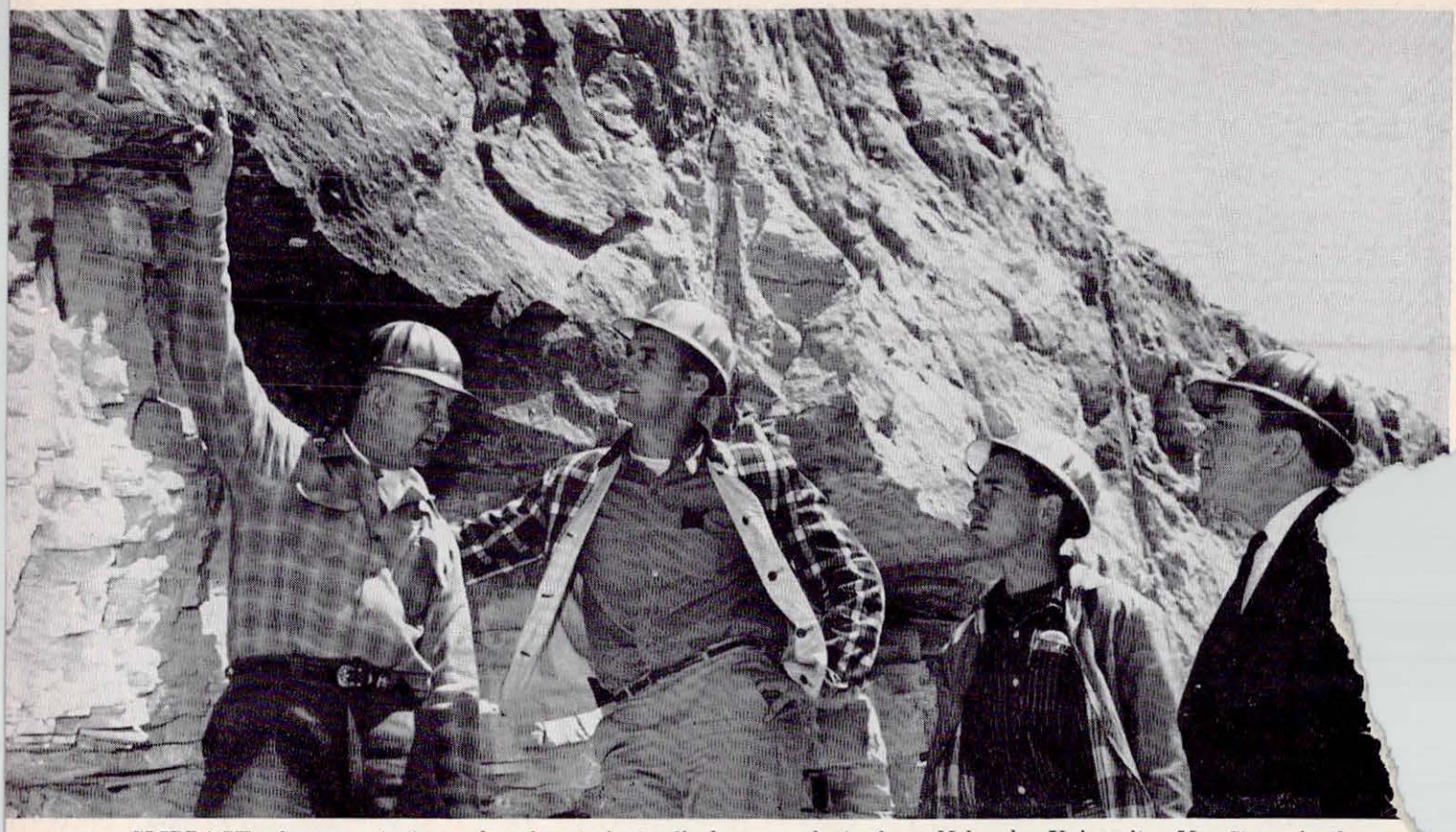

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OPERATION of soils-testing laboratory is explained by Engineer Charles Houser to students from Bradley University.

Line Change

ROCK CORE brought up by drill rig is discussed by Chief Engineer R. H. Beeder. Students here are from Kansas State University.

"GRAND FINALE" of one two-day tour over the big construction project was the detonation of 50,000 lb of high explosives. Inspection trips will be continued until early in July.

Communications Section Hears

► **The Story at a Glance: Microwave and data communications were major topics of discussion at last week's convention of the AAR Communications Section. Planning for microwave, and specifications for a microwave system, were subjects of committee reports. Other papers dealt with data transmission over telephone lines and the economics of data handling.**

The railroad industry's renewed interest in microwave, particularly active in the last year or two, was pointed up sharply at the annual convention of the Communications Section in Detroit last week.

As Chairman H. W. Burwell, L&N communications engineer, put it in his opening address: "More and more, the railroads are calling upon their communications departments to furnish facilities requiring an enlarged communication plant. With the limited wire facilities provided in the past we are forced to turn to the new electronic systems, either carrier or microwave."

It was this growing interest in microwave that led the Communications Section last year, during its Cincinnati meeting, to order the preparation of committee reports on (1) planning a microwave system and (2) specifications for such a system. These reports were presented last week.

Microwave Balance Sheet

From these reports, the following plus factors emerged:

(1) A properly designed, installed and maintained microwave system has proved to be more dependable than an equivalent wire line system.

(2) Generally speaking, microwave provides a higher quality signal.

(3) Microwave systems are inherently large capacity systems.

(4) The microwave system does not suffer from many of the maintenance problems which are encountered in wire line operations, since microwave maintenance is concentrated at a limited number of locations rather than being dispersed over the full extent of the railroad.

(5) Microwave stations provide a convenient means to facilitate application of VHF radio, hotbox and dragging equipment detector units, and other protective devices. Various types of detector equipment can conveniently be connected through channels of the microwave system to central points.

Minus factors include these:

(1) Difficulty in providing direct service to local offices, such as way stations and telephone pole boxes or signal equipment.

(2) Difficulty in reaching a drop-out point (station to be served) from the main microwave system.

(3) Personnel with special training will be required to maintain the microwave equipment.

(4) Certain types of interference may cause transmission errors.

(5) It would be difficult to restore service should a complete station be knocked out by a flood or an earthquake.

(6) Installation of microwave systems requires FCC authorization, which is not necessary for wire line systems.

(7) Proper selection of frequencies is most important and requires coordination with other microwave users in the same general geographic areas.

Point-to-Point Radio

The tremendous growth of mobile VHF radio precludes extensive use of the 30- to 300-megacycle frequency spectrum for point-to-point radio communications, Federal Communications Commissioner John S. Cross told the convention. He said the number of radio transmitters in this frequency range increased in 1959 from 345,000 to 445,000. The great need for mobile communications—by, for example, railroads and taxi companies—plus technical limitations imposed on design of mobile radio equipment, has made it necessary for the 30- to 300-MC range to be devoted extensively to mobile communications. Mr. Cross suggested that point-to-point communications could be secured in the 460-470-MC range. If one frequency for a fixed station is not enough he noted, application to the commission can be made for a second frequency. Point-to-point communications, other than microwave, might also be secured in the 27-MC range, but here frequencies are shared with others and there is no protection from interference.

As for interservice cooperation, Mr. Cross said the commission, after securing evidence from users, believes separate frequencies should be assigned for particular services in the 25- to 890-MC range.

Expansion of maritime services has been given preference over land transportation services so far as some frequencies are concerned, because, Mr. Cross said, some maritime services are international in scope. A recent worldwide conference at The Hague on maritime radio has resulted in setting aside a pair of frequencies (157.00 and 1616.60 MC) for universal duplex port operations. Railroads operating in the 161.61 MC frequency will have to vacate that frequency by May 1, 1961.

Noting the great interest railroads have shown in microwave, Mr. Cross pointed out that a hearing was held in 1959 on future microwave needs of particular users, but the FCC has not issued any specific ruling.

Data Transmission Studies

Paul A. Flanagan, superintendent of communications, C&O, talked on some of the economic aspects of transmitting data for C&O's CLIC operation. Having selected the document, the train waybill, and the data processing system, "we were ready for the simpler things . . . like how to transport data on some 4,500 or more cars a day from 275 separate locations to a data handling center, and at the same time deliver one or two lines of information on all cars passing from yard to yard prior to train arrival. It is almost impossible to

SR Plans 637 Miles

Largest privately-owned microwave system in the U. S. is scheduled to go into operation late next year on the Southern between Washington, D. C., and Atlanta, Ga.

President Harry A. DeButts said last week the railroad has placed a $5.3-million order with the General Electric Co. for "newly developed multi-channel transistorized microwave and two-way radio communications system" for the 637-mile route. Work will begin as soon as an FCC license is granted.

The new communications system, consisting of 54 microwave stations, will replace Southern's telephone and telegraph pole lines between Washington and Atlanta. For the last four years Southern has operated 134 miles of microwave communications in south Georgia and north Florida.

Mr. DeButts said the new system "will make it possible for Southern to extend its infra-red ray hotbox detection system, which will further enhance the railway company's safety program."

Pros and Cons of Microwave

obtain exact information on all of the pertinent factors related to such projects . . . in an industry like a railroad with a continuous assembly line several thousand miles long, operating 24 hours a day the year round."

Early in the study a Teletype network was recommended as the communications link. The project was then broken down into the categories of input, output, processing, distribution, and labor implications. Then each of these was further subdivided for valuation. For example, "input" included points of pick up, volume expected, time available for data preparation, and tolerable delay in transmission.

Time and Cost Considered

As a general rule it was found there was adequate time at the originating terminal to prepare and transmit consistent data to the next intermediate yard. At all intermediate yards the switch list could be prepared from the advance information and data prepared for cars to be picked up. That was as far as they could go until the train actually arrived and enroute pickups and setoffs could be determined. Based on current train operation and required data for the processing system, a word count allowed determinations of tape preparation and transmission time. The cost of leasing the various types of equipment from the telephone companies was then entered into the computations. The approximate cost per line of information for the particular load requirement was:

$0.017 for two 60-wpm (word per minute circuits).
$0.011 for one 75-wpm circuit.
$0.013 for one 100-wpm circuit.

The possibility of using transceivers was studied and calculated to cost about $0.028 per line of information compared to $0.016 for equivalent Teletype service at 75 wpm.

In this particular study, labor costs at yard locations were not considered, as the operation did not require additional manpower or permit a reduction in existing forces. It was a case of engineering a work load to meet a labor situation, and obtain in the process a worthwhile by-product. The by-product was a Teletype tape suitable for line transmission and data processing.

The standard data preparation equipment in the yard offices consists of an assembly of conventional Teletype equipment: a keyboard send-receive page printer, an automatic tape transmitter-distributor, and a typing reperforator. The typical current average rental cost is $83.50 per month. The preparation of master tapes could be expedited by using more elaborate equipment. Typical charge for this equipment is $133. Justification for this increase is that, through its use, it is possible to perform approximately 33% more work over a 24-hour period when the handling of repetitive information, such as preparation of ore consists, is necessary.

Where Railroad Microwave Stands Today

IT'S IN USE . . .

On the	Between	For a Distance of
Alaska	Anchorage and Portage	50 mi
Canadian National	Sydney, N.S., and St. John's, Nfld.	550 "
Canadian Pacific	Vancouver, B.C., and Nanaimo	40 "
Pacific Great Eastern	Vancouver, Ft. St. John and Dawson Creek, B. C.	750 "
Pennsylvania	Norristown, Pa., and Reading	41 "
Rock Island	Norton, Kan., and Goodland	106 "
Santa Fe	Beaumont, Tex., and Galveston	68 "
	Los Angeles and San Bernardino	70 "
	San Bernardino and Cushenbury	56 "
	Barstow, Cal., and Bakersfield	141 "
	Topeka, Kan., and Kansas City (Argentine)	61 "
Southern	Adel, Ga., Valdosta and Live Oak, Fla.	158 "
Southern Pacific	Dunsmuir, Cal., and Black Butte	23 "
		2,114 mi

IT'S PLANNED . . .

For the	Between	For a Distance of
Denver & Rio Grande Western	Pueblo, Denver and Ogden	700 mi
New York Central	Indianapolis and Avon, Ind.	12 "
Santa Fe	Barstow, Cal., and Crestline	55 "
	Barstow and Seligman, Ariz.	314 "
	Amarillo, Tex., and Wellington, Kan.	311 "
	Wellington and Topeka	195 "
	Winslow, Ariz., and Albuquerque, N. M.	288 "
	Albuquerque and Amarillo	375 "
	Kansas City and Chicago	450 "
Southern	Washington, D.C., and Atlanta	637 "
Union Pacific	Omaha and Laramie, Wyo.	563 "
		3,900 mi

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	1959	Operating Expenses: Maint. Way and Structures: Total 1960	1959	Deprec and Retirements	Maint. Equipment: Total 1960	1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	1959	Operating ratio 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	1959
Akron, Canton & Youngstown	April	171	491	....	505	580	55	56	6	79	79	15	49	157	389	383	76.9	65.9	117	73	37	71
	4 mos.	171	1,972	....	2,019	2,045	232	237	22	324	282	61	183	621	1,554	1,479	77.0	72.3	465	286	150	188
Alabama, Tenn. & Northern	April	214	235	....	239	331	55	50	6	—1	8	6	5	76	138	150	57.8	45.3	101	30	18	42
	4 mos.	214	1,031	....	1,047	1,256	215	199	26	35	39	22	18	337	618	595	59.1	47.3	428	114	74	158
Atchison, Topeka & Santa Fe	April	12,970	46,091	2,762	53,930	55,696	6,129	6,791	771	10,802	10,941	2,441	1,454	18,628	39,272	39,683	72.8	71.3	14,659	8,544	5,307	6,363
	4 mos.	12,970	174,059	10,988	203,883	204,590	23,570	25,120	2,945	42,910	41,887	9,788	5,477	74,648	155,654	152,947	76.3	74.8	48,229	29,919	16,366	19,598
Atlanta & St. Andrews Bay	April	81	340	...	346	299	37	40	4	29	32	8	8	78	177	173	51.1	58.0	169	78	51	38
	4 mos.	81	1,270	....	1,291	1,232	147	164	14	111	127	32	29	299	683	701	52.9	56.9	608	278	182	167
Atlanta & West Point	April	93	230	23	312	331	43	46	7	52	52	14	18	131	267	273	85.6	82.5	45	20	—5	16
	4 mos.	93	943	92	1,247	1,253	171	169	31	207	202	57	73	524	1,061	1,062	85.1	84.8	185	75	9	19
Western of Alabama	April	133	271	21	339	351	40	59	9	62	59	19	22	136	282	301	83.1	85.7	57	43	9	14
	4 mos.	133	1,129	86	1,375	1,391	192	193	37	251	234	76	85	559	1,177	1,150	85.6	82.6	198	155	35	74
Atlantic Coast Line	April	5,573	12,475	1,572	15,162	14,857	2,044	2,125	178	2,634	2,454	685	516	5,540	11,492	11,229	75.8	75.6	3,670	1,775	1,186	1,181
	4 mos.	5,573	48,277	6,623	59,406	57,407	8,246	7,717	742	10,142	10,010	2,667	2,032	22,433	46,176	44,759	77.7	78.0	13,230	6,100	4,329	3,857
Baltimore & Ohio	April	5,910	29,674	1,476	33,889	35,819	3,813	3,651	502	6,517	6,334	1,076	974	14,180	27,422	27,727	80.9	77.4	6,467	2,507	1,887	4,289
	4 mos.	5,910	117,591	5,177	133,421	129,046	14,519	13,828	2,012	27,461	23,461	4,339	3,881	58,252	111,856	104,941	83.8	81.3	21,565	10,062	3,679	9,169
Staten Island Rap. Trans	April	29	168	91	277	299	53	60	12	45	42	2	2	155	286	295	103.1	98.5	—9	49	—78	—66
	4 mos.	29	647	362	1,047	1,136	233	230	45	191	161	7	8	612	1,173	1,170	112.0	102.9	—126	198	—400	—318
Bangor & Aroostook	April	602	1,406	24	1,491	1,483	396	358	20	279	310	110	33	385	1,171	1,159	78.5	78.2	320	97	240	196
	4 mos.	602	6,110	83	6,379	6,013	1,651	1,521	80	1,135	1,178	441	138	1,719	4,973	4,823	78.0	80.2	1,406	399	1,042	833
Bessemer & Lake Erie	April	203	2,293	....	2,384	2,205	259	254	23	727	721	141	35	510	1,688	1,677	70.8	76.1	696	623	368	335
	4 mos.	203	6,908	....	7,332	5,687	916	911	100	2,508	2,542	497	148	1,885	6,066	5,936	82.7	104.4	1,266	1,714	981	537
Boston & Maine	April	1,557	5,103	431	6,040	6,509	636	803	143	924	968	248	161	2,365	4,452	5,158	73.7	79.2	1,588	428	592	414
	4 mos.	1,557	20,310	1,936	24,137	25,394	2,709	3,258	573	3,525	3,557	997	654	10,063	18,425	20,681	76.3	81.4	5,713	1,827	1,630	642
C. P. R. in Maine	April	234	640	40	708	649	78	112	20	123	142	18	19	174	422	471	59.5	72.5	287	36	168	85
	4 mos.	234	3,855	170	4,140	3,685	357	481	81	521	575	70	82	926	2,002	2,106	48.4	57.1	2,138	144	1,584	1,061
Carolina & Northwestern	April	284	240	....	249	279	19	53	7	28	33	21	5	74	140	188	56.2	67.3	109	21	29	31
	4 mos.	284	1,067	....	1,090	1,133	109	195	27	110	128	84	21	324	620	720	56.9	63.5	470	91	165	128
Central of Georgia	April	1,745	3,469	121	3,882	3,841	608	584	44	778	688	195	175	1,474	3,239	3,094	83.4	80.6	643	278	344	518
	4 mos.	1,745	13,258	513	14,666	14,735	2,335	2,290	173	2,997	2,761	762	699	5,850	12,680	12,350	86.5	83.8	1,986	1,121	842	1,359
Central of New Jersey	April	594	3,349	459	4,225	4,488	466	500	96	687	764	134	77	2,041	3,507	3,711	83.0	82.7	718	485	—86	91
	4 mos.	594	13,932	1,867	17,212	17,164	1,967	1,967	388	2,905	3,262	535	316	8,621	14,809	15,113	86.0	88.1	2,403	1,967	—951	—545
Central Vermont	April	375	722	53	846	881	163	186	17	119	114	9	19	339	679	709	80.3	80.4	167	54	6	2
	4 mos.	375	2,740	209	3,224	3,407	546	613	70	475	456	37	75	1,327	2,584	2,735	80.1	80.3	640	220	14	—16
Chesapeake & Ohio	April	5,122	27,525	498	29,542	30,486	3,300	3310	493	5,344	5,288	1,903	794	10,565	21,668	21,900	73.3	71.8	7,874	3,743	4,257	4,996
	4 mos.	5,122	107,840	1,855	114,677	115,482	13,100	12,410	1,890	21,325	20,430	7,599	3,406	42,201	86,392	85,701	75.3	74.2	28,285	13,473	15,812	18,436
Chicago & Eastern Illinois	April	862	2,398	150	2,911	3,304	352	397	31	542	545	183	136	1,192	2,388	2,484	82.0	75.2	523	232	113	427
	4 mos.	862	9,630	618	11,418	12,303	1,417	1,446	125	2,118	1,976	732	553	4,769	9,556	9,507	83.7	77.3	1,862	910	442	1,141
Chicago & Illinois Midland	April	121	635	....	646	731	72	44	7	116	102	23	30	170	435	364	67.3	49.8	211	115	72	130
	4 mos.	121	2,575	....	2,626	2,263	175	151	28	428	398	92	121	618	1,539	1,387	58.6	61.3	1,087	613	438	343
Chicago & North Western	April	9,280	14,142	1,338	16,677	18,450	2,701	3,038	374	3,108	3,229	1,002	562	7,118	14,514	15,952	87.0	86.5	2,164	1,365	33	542
	4 mos.	9,280	54,675	5,557	64,902	69,719	10,332	10,726	1,512	11,564	12,496	4,050	2,255	29,093	57,359	61,379	88.4	88.0	7,543	5,412	—1,654	—184
Chicago, Burl. & Quincy	April	8,659	16,530	1,497	20,368	22,165	2,522	3,182	366	3,622	4,320	1,086	688	8,016	15,829	17,655	77.7	79.7	4,539	2,453	1,767	1,661
	4 mos.	8,662	65,037	6,028	79,543	87,331	9,859	10,567	1,529	15,368	17,527	4,345	2,597	33,313	65,110	69,018	81.9	79.0	14,433	8,206	5,323	6,743
Chicago Great Western	April	1,469	2,575	6	2,801	2,836	381	401	42	483	441	127	125	953	2,026	1,973	72.3	69.5	775	321	224	361
	4 mos.	1,469	10,044	27	10,840	11,173	1,303	1,544	175	1,696	1,692	510	507	3,831	7,651	7,778	70.6	69.6	3,189	1,243	940	1,288
Chic., Milw., St. P. & Pac	April	10,598	14,894	1,014	18,043	20,008	2,877	3,053	421	3,191	3,545	880	534	7,495	15,281	16,338	84.7	81.7	2,762	1,684	241	1,380
	4 mos.	10,598	60,926	4,167	72,898	77,518	10,725	11,202	1,716	13,397	14,218	3,514	2,221	31,004	62,139	64,844	85.2	83.7	10,759	6,722	915	3,135
Chicago, R. Is. & Pacific	April	7,527	15,108	1,201	18,079	19,043	2,357	2,426	251	3,213	3,243	657	553	7,347	14,476	14,535	80.1	76.3	3,603	1,552	715	1,053
	4 mos.	7,526	57,841	5,311	69,949	73,877	8,536	8,881	976	12,007	13,026	2,610	2,217	28,854	55,484	57,604	79.3	78.0	14,465	6,385	2,817	3,728
Clinchfield	April	293	1,789	....	1,799	1,845	187	205	22	335	343	106	65	459	1,113	1,129	61.9	61.2	686	208	668	639
	4 mos.	293	6,900	....	6,937	7,366	771	890	89	1,388	1,291	427	262	1,810	4,513	4,540	65.1	61.6	2,424	831	2,182	2,540
Colorado & Southern	April	712	1,125	60	1,371	1,392	160	284	18	258	267	79	35	513	1,035	1,211	75.5	87.0	336	194	138	33
	4 mos.	712	4,314	239	5,189	5,372	661	734	113	894	941	315	140	2,107	4,084	4,293	78.7	79.9	1,106	609	424	343
Ft. Worth & Denver	April	1,362	1,352	118	1,676	1,804	230	367	39	196	304	46	69	789	1,412	1,662	84.2	92.2	264	66	17	—33
	4 mos.	1,362	6,439	477	7,769	7,955	870	1,387	134	875	1,142	186	291	3,263	5,798	6,711	74.6	84.4	1,971	693	403	47
Colorado & Wyoming	April	39	222	....	402	437	18	21	2	39	36	12	2	139	213	217	52.9	49.5	189	111	69	89
	4 mos.	39	974	....	1,713	1,535	77	82	9	131	167	50	9	607	898	850	52.4	55.4	815	478	303	268
Delaware & Hudson	April	763	3,537	118	3,813	3,906	450	412	61	932	723	201	109	1,382	3,151	2,961	82.6	75.8	662	368	382	556
	4 mos.	763	14,680	536	15,789	15,694	1,594	1,605	237	3,506	2,811	794	427	5,757	12,409	11,944	78.6	76.1	3,381	1,530	2,083	2,118
Delaware, Lack. & Western	April	941	4,191	772	5,866	6,204	547	580	160	1,090	1,133	336	190	2,972	5,180	5,389	88.3	86.9	687	690	—246	77
	4 mos.	941	17,779	3,080	24,040	23,969	2,372	2,353	597	4,459	4,395	1,363	800	12,502	21,657	21,796	90.1	90.9	2,383	2,782	—1,346	—977
Denver & Rio Grande Western	April	2,128	6,037	172	6,424	6,443	878	816	97	1,010	977	331	230	2,000	4,405	4,315	68.6	67.0	2,019	1,139	831	946
	4 mos.	2,128	24,163	781	25,751	24,665	2,750	2,621	375	3,949	3,836	1,308	946	8,124	16,951	16,611	65.8	67.4	8,800	5,072	3,713	3,818
Detroit & Toledo Shore Line	April	50	548	....	595	668	55	59	4	74	80	24	19	225	391	419	65.8	62.7	203	78	33	58
	4 mos.	50	2,460	....	2,641	2,958	226	262	16	318	360	96	80	966	1,660	1,767	62.8	59.7	981	342	163	263
Detroit, Toledo & Ironton	April	465	1,635	....	1,715	1,950	269	230	29	385	427	152	57	497	1,307	1,314	76.2	67.4	407	129	271	475
	4 mos.	465	7,410	....	7,796	8,187	1,050	1,099	116	1,711	1,585	605	237	2,080	5,490	5,409	70.4	66.1	2,305	511	1,699	2,080
Duluth, Miss. & Iron Range	April	575	3,725	....	4,344	2,827	469	531	71	636	586	200	13	1,207	2,583	2,337	59.5	82.6	1,760	368	1,392	209
	4 mos.	575	5,253	2	6,105	3,917	1,798	1,944	322	2,814	2,419	800	55	3,313	9,018	8,245	147.7	210.5	—2,913	829	—3,624	—4,992
Duluth, So. Shore & Atlantic	April	544	435	2	469	601	106	122	11	113	110	26	34	194	471	479	100.5	79.7	—2	42	—60	56
	4 mos.	544	1,976	10	2,083	2,066	408	422	42	421	466	105	134	775	1,840	1,867	88.3	90.4	243	165	12	11

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	1959	Operating Expenses: Maint. Way and Structures: Total 1960	1959	Deprec and Retirements	Maint. Equipment: Total 1960	1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	1959	Operating ratio 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	1959
Duluth, Winnipeg & Pacific	April	175	365	....	374	450	81	111	5	54	56	1	7	169	322	356	86.0	79.0	52	38	—75	—29
	4 mos.	175	1,929	3	1,955	1,877	306	323	21	229	248	4	29	722	1,329	1,354	68.0	72.1	626	171	114	29
Elgin, Joliet & Eastern	April	205	3,333	....	4,527	5,515	341	317	32	894	667	122	50	1,744	3,399	3,253	75.1	59.0	1,128	554	203	755
	4 mos.	205	15,062	....	19,955	19,714	1,390	1,056	119	3,493	2,955	499	175	7,694	14,259	12,984	71.5	65.9	5,696	2,831	1,209	1,936
Erie	April	2,239	11,127	528	12,962	13,561	1,283	1,350	228	2,191	2,161	545	376	6,195	10,786	10,863	83.2	80.1	2,177	1,201	148	893
	4 mos.	2,239	47,050	2,202	53,815	51,841	5,242	5,157	914	9,029	8,388	2,220	1,480	25,101	43,778	43,074	81.4	83.1	10,037	4,865	1,991	1,387
Florida East Coast	April	572	2,316	544	3,138	3,260	407	462	58	536	628	117	86	1,124	2,328	2,550	74.2	78.2	809	222	263	192
	4 mos.	572	9,193	2,289	12,685	13,364	1,716	1,887	178	2,338	2,565	469	356	4,581	9,792	10,554	77.2	79.0	2,893	925	862	838
Georgia Railroad	April	321	551	16	664	692	84	102	9	116	124	35	40	298	577	624	87.0	90.2	87	42	66	38
	4 mos.	321	2,080	61	2,501	2,673	342	400	34	463	496	136	159	1,178	2,295	2,454	91.8	91.8	206	169	119	112
Georgia & Florida	April	321	279	....	286	333	130	84	3	41	38	10	23	82	296	271	103.6	81.5	—10	21	—42	9
	4 mos.	321	1,098	....	1,123	1,271	420	304	15	168	166	40	93	369	1,128	1,028	100.4	80.8	—5	83	—162	53
Grand Trunk Western	April	951	4,111	177	4,740	4,782	633	641	59	833	960	112	93	2,230	4,032	4,451	85.1	93.1	708	405	—192	—676
	4 mos.	951	17,345	822	19,974	20,350	2,596	2,657	223	3,421	3,553	450	367	9,135	16,501	17,605	82.6	86.5	3,473	1,617	79	—1,097
Great Northern	April	8,312	17,497	643	19,511	19,882	2,966	3,037	312	3,948	3,707	874	652	7,211	15,765	15,648	80.8	78.7	3,746	1,878	1,632	1,585
	4 mos.	8,294	65,205	2,402	72,503	74,208	10,216	10,419	1,220	15,206	14,751	3,484	2,346	28,978	60,626	60,321	83.6	81.3	11,877	7,367	3,596	4,856
Green Bay & Western	April	219	327	....	338	405	49	68	5	51	48	9	27	116	269	283	79.4	70.0	70	28	2	32
	4 mos.	219	1,436	....	1,487	1,544	198	211	19	186	186	35	111	474	1,070	1,098	71.9	71.1	417	208	70	111
Gulf, Mobile & Ohio	April	2,752	6,100	218	6,795	7,221	884	923	72	1,362	1,401	267	294	2,268	5,163	5,237	76.0	72.5	1,633	772	490	645
	4 mos.	2,752	23,366	917	26,092	27,329	3,497	3,609	295	5,468	5,436	1,175	1,180	9,212	20,810	20,894	79.8	76.5	5,282	2,365	1,383	1,855
Illinois Central	April	6,500	17,644	1,674	21,875	22,686	3,233	3,392	377	4,283	4,246	854	652	8,387	17,652	18,064	80.7	79.6	4,223	2,389	1,085	1,622
	4 mos.	6,500	70,838	7,239	87,484	88,371	12,787	13,130	1,468	17,134	17,111	3,403	2,608	34,492	71,435	72,501	81.7	82.0	16,049	9,302	3,893	5,101
Illinois Terminal	April	335	657	....	742	963	71	114	3	143	181	23	49	295	614	766	82.7	79.5	129	32	21	39
	4 mos.	335	2,691	....	3,012	3,434	327	387	12	591	732	115	190	1,239	2,571	2,966	85.4	86.4	441	101	18	—31
Kansas City Southern	April	891	3,251	64	3,684	3,739	325	314	47	492	516	113	97	1,204	2,248	2,233	61.0	59.7	1,436	605	548	612
	4 mos.	891	13,084	238	14,756	15,148	1,053	1,138	198	2,016	1,957	452	389	4,752	8,727	8,611	59.1	56.9	6,029	2,561	2,400	2,737
Kansas, Oklahoma & Gulf	April	327	431	....	431	453	29	66	7	42	30	12	33	108	240	253	55.6	56.0	192	86	65	69
	4 mos.	327	1,688	....	1,691	2,071	148	225	30	166	142	48	137	423	992	1,011	58.6	48.8	700	309	211	402
Lake Superior & Ishpeming	April	160	371	....	474	305	56	71	12	77	69	36	2	113	265	266	55.8	87.0	209	47	170	12
	4 mos.	160	583	....	757	576	196	210	48	303	249	142	8	307	886	812	117.1	141.1	—130	177	—265	—348
Lehigh & Hudson River	April	96	251	....	252	272	23	31	2	30	31	8	16	105	194	210	76.9	77.1	58	20	1	1
	4 mos.	96	1,005	....	1,008	1,074	98	122	10	124	123	33	63	428	787	815	78.1	75.9	221	81	—2	22
Lehigh & New England	April	177	330	....	332	371	38	69	7	161	162	38	11	156	418	513	125.8	89.8	—86	26	—22	176
	4 mos.	177	1,266	....	1,279	1,797	180	229	30	670	577	155	65	662	1,777	1,876	138.9	104.4	—498	114	—303	266
Lehigh Valley	April	1,127	4,000	135	4,366	5,074	583	599	95	786	893	198	138	2,165	3,904	4,423	89.4	87.2	462	467	—277	—56
	4 mos.	1,127	17,368	505	18,695	18,854	2,439	2,370	388	3,260	3,623	727	551	9,352	16,535	17,591	88.4	93.3	2,160	1,879	—615	—1,333
Long Island	April	344	1,012	4,616	5,894	5,750	839	838	105	1,077	1,123	169	51	2,951	5,161	5,090	87.6	88.5	733	409	87	82
	4 mos.	344	4,009	18,374	23,260	21,937	3,455	3,129	430	4,496	4,306	677	174	11,982	21,013	20,023	90.3	91.3	2,247	1,664	—259	—312
Louisiana & Arkansas	April	746	1,928	42	2,147	2,119	208	207	17	281	312	98	79	662	1,310	1,349	61.0	63.7	837	447	280	271
	4 mos.	746	7,994	155	8,700	8,304	742	717	80	1,272	1,136	392	319	2,718	5,365	5,103	61.7	61.5	3,335	1,640	1,209	1,159
Louisville & Nashville	April	5,684	17,222	664	19,490	19,705	1,900	2,711	289	4,570	4,078	1,146	500	7,276	15,223	15,534	78.1	78.8	4,267	2,886	1,609	1,750
	4 mos.	5,684	68,647	2,628	77,341	76,924	9,400	10,498	1,254	16,237	16,427	4,573	1,977	29,869	61,326	62,514	79.3	81.3	16,015	10,844	5,964	5,805
Maine Central	April	936	2,052	17	2,186	2,264	318	378	28	379	398	82	31	704	1,552	1,729	71.0	76.4	635	303	215	210
	4 mos.	936	8,346	89	8,956	8,744	1,379	1,483	113	1,546	1,537	332	123	3,100	6,610	7,023	73.8	80.3	2,345	1,102	803	606
Minneapolis & St. Louis	April	1,391	1,594	2	1,643	1,862	229	269	29	279	352	101	121	615	1,377	1,555	83.8	83.5	266	154	63	147
	4 mos.	1,391	6,523	3	6,720	7,067	998	1,009	118	1,181	1,246	405	491	2,484	5,706	5,991	84.9	84.8	1,014	674	222	420
Minn., Northfield & Southern	April	77	288	....	304	385	19	28	3	44	44	13	34	81	215	240	70.8	62.2	89	57	28	50
	4 mos.	77	1,187	....	1,245	1,535	71	81	10	178	166	51	136	350	884	899	71.1	58.6	360	230	115	240
Minn., St. P. & S. Ste. Marie	April	3,222	2,656	30	2,846	3,154	545	668	49	636	762	143	118	1,278	2,780	3,114	97.7	98.7	66	280	—303	—180
	4 mos.	3,222	10,642	129	11,364	12,656	2,072	2,275	192	2,482	2,827	575	448	5,425	11,211	11,963	98.7	94.5	153	658	—663	—489
Missouri-Illinois	April	172	515	....	519	494	38	42	3	95	88	40	15	135	297	278	57.3	56.3	222	162	96	111
	4 mos.	172	1,865	....	1,876	1,690	157	177	13	353	358	160	56	516	1,126	1,106	60.0	65.4	750	600	351	322
M-K-T Lines	April	2,917	4,150	60	4,593	5,338	512	619	87	831	1,232	262	179	1,706	3,457	4,024	75.3	75.4	1,136	357	333	414
	4 mos.	2,918	16,637	269	18,378	19,893	1,858	2,205	318	3,712	4,072	1,048	712	6,806	13,827	14,748	75.2	74.1	4,551	1,413	1,288	1,502
Missouri Pacific	April	9,413	22,222	824	25,566	26,044	3,414	3,675	323	4,383	4,340	972	695	9,505	18,989	19,336	74.3	74.2	6,577	2,367	3,033	3,075
	4 mos.	9,413	85,565	3,321	98,388	98,835	12,434	12,793	1,276	17,258	17,230	3,917	2,804	37,860	74,349	74,894	75.6	75.8	24,039	8,018	11,183	11,096
Monon	April	541	1,384	26	1,505	1,750	249	246	20	278	320	76	100	634	1,368	1,473	90.8	84.2	138	110	—67	111
	4 mos.	541	5,823	100	6,314	6 681	920	857	82	1,114	1,223	305	422	2,626	5,506	5,753	87.2	86.1	809	473	—21	326
Monongahela	April	177	630	....	632	578	76	70	11	47	51	11	1	139	284	291	45.0	50.4	348	90	208	208
	4 mos.	177	2,409	....	2,418	1,667	294	254	49	218	223	44	4	593	1,176	1,366	48.6	81.9	1,242	312	707	7
New York Central	April	10,368	43,570	5,503	58,165	60,149	6,556	6,285	1,088	11,250	10,700	2,401	1,195	26,664	48,617	48,619	83.6	80.8	9,548	5,243	2,654	4,802
	4 mos.	10,368	178,778	23,022	235,096	232,790	24,886	24,862	4,315	45,000	42,800	9,754	4,330	109,072	195,364	196,070	83.1	84.2	39,733	22,831	9,154	8,507
Pitts. & Lake Erie	April	220	2,923	32	3,113	3,573	409	390	56	922	894	330	65	1,134	2,742	2,820	88.1	78.9	371	623	930	1,018
	4 mos.	220	12,638	143	13,438	12,394	1,665	1,417	225	3,506	3,707	1,328	251	4,718	10,992	10,924	81.8	88.1	2,447	3,027	4,244	3,501
New York, Chicago & St. Louis	April	2,170	11,900	111	12,468	13,767	1,304	1,428	166	2,109	2,248	469	357	4,665	8,905	9,360	71.4	68.0	3,562	1,725	1,250	1,786
	4 mos.	2,170	49,451	493	51,712	51,019	5,027	5,322	647	8,351	8,185	1,894	1,439	19,379	36,143	36,026	69.9	70.6	15,569	7,521	5,523	6,110
New York, N. H. & Hartford	April	1,762	6,336	3,520	11,613	13,063	1,406	1,576	264	2,026	1,878	525	282	5,583	10,137	10,606	87.3	81.2	1,477	981	—1,018	70
	4 mos.	1,762	25,296	14,614	46,467	49,002	5,497	5,386	1,040	7,594	7,365	1,927	1,122	23,072	41,000	41,462	88.2	84.6	5,467	4,160	—4,706	—1,856
New York Connecting	April	21	320	....	385	355	74	53	25	17	4	....	....	98	193	157	50.1	44.4	192	87	72	50
	4 mos.	21	1,261	....	1,407	1,391	278	228	101	61	46	....	....	408	762	644	54.2	46.3	645	355	175	305
New York, Susq. & Western	April	100	330	13	361	354	41	42	6	52	56	11	9	154	290	313	80.2	88.3	71	34	—1	—27
	4 mos.	100	1,267	59	1,395	1,380	178	160	28	208	223	42	35	631	1,182	1,230	84.7	89.1	213	136	—88	—114

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a RAILWAY AGE Service Page

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	1959	Operating Expenses: Maint. Way and Structures: Total 1960	1959	Deprec and Retirements	Maint. Equipment: Total 1960	1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	1959	Operating ratio 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	1959
Norfolk & Western	April	2,743	20,710	188	21,814	22,080	2,187	2,584	429	3,461	3,891	1,404	414	5,539	12,362	13,459	56.7	61.0	9,452	5,043	5,823	5,322
	4 mos.	2,743	80,035	791	84,459	84,636	9,089	9,520	1,633	13,947	14,895	5,817	1,516	22,644	50,170	52,520	59.4	62.1	34,289	18,224	21,570	19,949
Norfolk Southern	April	592	925	....	937	821	177	198	14	128	135	40	50	261	682	719	72.8	87.6	255	109	134	20
	4 mos.	592	2,995	....	3,046	3,110	648	741	56	516	502	160	196	987	2,593	2,752	85.1	88.5	454	269	169	41
Northern Pacific	April	6,828	13,521	367	14,904	14,828	2,718	2,552	326	2,845	2,816	803	449	5,843	12,749	12,646	85.5	85.3	2,155	1,472	934	991
	4 mos.	6,828	50,071	1,529	55,751	855,807	8,276	7,921	1,267	11,595	11,226	3,204	1,711	23,787	48,982	48,006	87.9	86.0	6,769	5,925	1,773	3,072
Northwestern Pacific	April	328	1,030	1	1,031	1,239	198	219	18	70	84	3	8	293	592	668	57.4	54.0	439	147	50	138
	4 mos.	328	3,910	1	3,931	4,521	832	887	71	286	331	10	31	1,200	2,455	2,651	62.5	58.6	1,476	442	82	419
Pacific Electric	April	353	1,079	....	1,233	1,230	167	166	23	50	66	14	25	528	875	934	70.9	76.0	358	138	40	31
	4 mos.	354	3,955	....	4,465	4,684	695	741	94	144	222	15	89	1,998	3,337	3,559	74.7	76.0	1,128	584	—130	86
Pennsylvania	April	9,895	60,484	8,635	79,089	79,982	8,035	7,857	1,474	14,501	15,473	2,909	1,246	34,115	62,197	63,350	78.6	79.2	16,892	6,245	4,275	6,249
	4 mos.	9,895	235,663	35,856	308,355	296,520	30,685	29,557	5,868	60,417	60,790	11,740	4,914	138,660	252,235	249,444	81.8	84.1	56,120	24,112	7,866	6,711
Penn.-Reading S. S. Lines	April	338	580	62	672	675	176	196	25	125	126	26	8	478	839	870	124.9	128.7	—167	77	—403	—410
	4 mos.	338	2,252	219	2,556	2,445	701	748	102	501	523	103	31	1,922	3,365	3,414	131.7	139.6	—810	309	—1,794	—1,803
Piedmont Northern	April	126	480	....	493	449	47	38	5	36	36	10	31	90	245	227	49.8	50.6	248	121	74	62
	4 mos.	126	1,932	....	1,982	1,977	183	163	19	152	135	39	127	377	995	916	50.2	46.3	987	473	280	322
Pittsburgh & West Virginia	April	132	749	....	759	947	154	148	25	157	169	45	73	217	658	705	86.7	74.5	101	49	66	129
	4 mos.	132	3,093	....	3,130	3,023	600	572	107	611	642	181	300	869	2,611	2,704	83.4	89.4	519	203	297	246
Reading	April	1,303	8,045	408	9,107	9,522	1,031	1,153	194	1,644	1,838	491	196	3,868	7,209	7,635	79.2	80.2	1,898	685	656	853
	4 mos.	1,303	33,437	2,052	37,991	36,189	4,452	4,238	760	7,275	7,100	1,932	776	16,304	30,743	30,306	80.9	83.7	7,247	2,548	2,490	2,636
Richmond, Fred. & Potomac	April	118	1,332	475	2,252	2,034	186	140	28	309	294	67	30	674	1,334	1,377	59.2	67.7	918	520	291	169
	4 mos.	118	5,310	1,913	8,721	8,260	695	624	118	1,166	1,181	267	119	2,762	5,348	5,628	61.3	68.1	3,373	1,952	1,063	732
Rutland	April	391	324	....	351	405	74	67	8	55	59	18	30	148	335	340	95.4	84.1	16	31	—14	30
	4 mos.	391	1,324	....	1,429	1,578	298	300	35	233	243	73	111	603	1,356	1,413	94.9	89.5	73	122	—50	25
St. Louis-San Francisco	April	4,547	8,971	152	10,047	10,525	1,497	1,602	168	1,655	1,856	592	349	3,881	8,006	8,381	79.7	79.6	2,041	773	1,081	1,167
	4 mos.	4,554	35,713	721	39,654	39,059	5,990	6,304	588	6,491	6,762	2,396	1,422	15,768	32,133	31,986	81.0	81.9	7,520	2,928	3,834	3,729
St. Louis-S. F. & Texas	April	143	421	....	441	465	27	25	4	26	26	1	22	149	236	247	53.5	53.1	205	80	60	67
	4 mos.	143	1,792	2	1,863	1,832	118	97	16	116	111	5	89	589	961	954	51.6	52.1	902	354	273	274
St. Louis Southwest. Lines	April	1,554	6,061	....	6,130	5,642	586	600	81	726	650	223	189	1,796	3,486	3,447	56.9	61.1	2,644	1,272	1,156	917
	4 mos.	1,554	22,958	1	23,224	21,559	2,294	2,370	310	2,773	2,618	849	740	7,176	13,688	13,691	58.9	63.5	9,537	4,293	4,140	3,324
Savannah & Atlanta	April	144	379	....	401	367	50	58	2	75	70	19	17	127	282	274	70.4	74.6	119	53	50	43
	4 mos.	144	1,346	....	1,412	1,302	190	218	7	273	254	77	67	467	1,051	1,022	74.4	78.5	361	153	154	148
Seaboard Air Line	April	4,147	12,217	1,322	14,727	14,134	1,784	1,804	286	2,602	2,543	727	468	5,103	10,660	10,480	72.4	74.1	4,067	2,012	1,715	1,712
	4 mos.	4,147	46,522	5,294	56,557	55,535	7,041	6,922	904	10,319	10,097	2,911	1,888	20,030	42,105	41,220	74.4	74.2	14,452	6,721	6,556	6,831
Southern Railway	April	6,267	19,511	951	22,518	23,314	2,777	3,013	352	4,033	3,821	1,027	505	6,967	15,496	15,655	68.8	67.1	7,022	3,027	2,968	3,418
	4 mos.	6,267	79,050	3,647	89,721	89,501	10,990	13,051	1,282	15,467	15,308	3,990	2,026	28,678	62,021	63,454	69.1	70.9	27,700	12,284	11,962	11,960
Alabama Great Southern	April	328	1,171	38	1,371	1,612	259	284	35	379	321	81	41	497	1,279	1,236	93.3	76.7	92	Cr. 84	130	232
	4 mos.	328	4,818	147	5,565	5,700	1,078	1,065	141	1,355	1,276	325	166	2,017	5,028	4,872	90.3	85.5	537	447	—211	186
Cinn., N. O. & Tex. Pac	April	337	2,975	78	3,316	3,777	574	612	71	781	705	263	83	870	2,495	2,468	75.2	65.3	821	406	583	820
	4 mos.	337	11,735	324	12,990	13,702	2,359	2,391	283	3,093	2,955	944	333	3,648	10,189	9,967	78.4	72.7	2,800	1,255	1,982	2,510
Georgia Southern & Florida	April	397	719	31	835	850	162	152	12	75	78	10	22	268	583	596	69.8	70.1	253	48	50	45
	4 mos.	397	2,731	133	3,203	3,447	709	578	45	300	324	41	89	1,035	2,364	2,285	73.8	66.3	839	181	22	281
New Orleans & Northeastern	April	203	838	31	947	1,046	209	217	23	229	197	100	27	241	778	784	82.1	74.9	169	81	138	170
	4 mos.	203	3,004	117	3,406	3,718	753	859	94	860	808	371	109	1,037	3,060	3,113	89.8	83.7	346	335	208	316
Southern Pacific	April	8,065	40,417	1,946	44,598	47,136	5,098	5,299	733	10,000	10,104	2,580	771	16,533	34,357	35,240	77.0	74.8	10,242	5,359	4,605	5,260
	4 mos.	8,066	160,088	7,912	178,078	175,683	20,320	20,322	2,175	39,386	37,696	10,248	3,039	65,788	136,670	135,950	76.7	77.4	41,408	21,696	19,232	18,002
Texas & New Orleans	April	4,091	10,460	245	11,320	12,065	1,743	2,138	147	1,624	1,650	203	247	3,987	8,196	8,972	72.4	74.4	3,124	1,292	580	715
	4 mos.	4,092	41,144	984	44,634	46,125	7,081	7,876	580	6,656	6,539	813	972	16,307	33,389	34,581	74.8	75.0	11,245	4,539	1,914	2,615
Spokane International	April	150	352	....	361	361	72	54	3	30	26	10	4	81	197	180	54.6	49.8	164	80	51	61
	4 mos.	150	1,140	....	1,176	1,244	211	187	15	119	123	40	17	279	665	665	56.5	53.4	511	263	164	213
Spokane, Portland & Seattle	April	936	2,689	59	2,931	2,957	452	428	52	467	457	129	34	1,042	2,102	2,033	71.7	68.7	829	256	454	461
	4 mos.	936	9,757	263	10,729	10,961	1,641	1,704	222	1,950	1,885	515	145	4,117	8,349	8,140	77.8	74.3	2,380	992	976	1,426
Tennessee Central	April	284	332	....	365	333	43	46	5	60	52	21	14	119	258	259	70.8	77.9	107	25	35	14
	4 mos.	284	1,264	....	1,375	1,392	183	161	20	221	214	85	59	490	1,046	1,032	76.1	74.1	329	101	50	110
Texas & Pacific	April	1,828	5,300	277	6,256	6,258	724	865	96	1,038	1,010	278	228	2,421	4,763	4,950	76.1	79.1	1,493	644	361	387
	4 mos.	1,828	21,484	1,123	25,075	25,533	2,917	3,145	392	4,288	4,239	1,121	912	10,106	19,682	19,924	78.5	78.0	5,393	2,332	1,224	1,507
Texas Mexican	April	161	391	....	348	352	44	63	6	37	33	11	12	85	202	207	58.2	58.8	145	66	43	44
	4 mos.	161	1,038	....	1,130	1,237	196	232	23	140	134	46	50	326	805	841	71.2	68.0	326	154	64	85
Toledo, Peoria & Western	April	239	577	....	607	647	75	73	7	48	55	13	56	171	395	389	65.0	60.1	212	101	58	82
	4 mos.	239	2,415	....	2,512	2,476	295	291	27	204	202	54	212	703	1,579	1,543	62.9	62.3	932	421	257	279
Union Pacific	April	9,747	36,280	1,797	40,916	42,080	4,783	5,253	716	7,226	8,111	2,382	1,313	13,965	29,392	31,407	71.8	74.6	11,524	7,094	2,799	3,090
	4 mos.	9,745	142,291	7,215	160,934	166,684	18,813	20,808	2,846	30,713	32,547	9,484	5,108	56,634	119,926	124,634	74.5	74.8	41,009	26,043	8,896	11,698
Wabash	April	2,413	8,041	343	9,350	10,376	865	1,219	115	1,362	1,458	472	337	4,197	7,203	8,120	77.0	78.3	2,147	705	562	782
	4 mos.	2,413	32,258	1,566	37,634	39,559	3,719	4,708	453	5,620	5,775	1,888	1,332	17,500	29,982	32,195	79.7	81.4	7,652	2,799	1,705	1,908
Ann Arbor	April	294	634	....	639	709	76	86	7	159	169	45	35	321	614	666	96.1	93.9	25	58	—58	—40
	4 mos.	294	2,765	....	2,783	2,833	259	327	19	648	633	179	132	1,423	2,547	2,609	91.5	92.1	237	231	—105	—53
Western Maryland	April	843	3,987	....	4,113	4,622	633	578	58	791	802	272	131	1,318	3,087	3,098	75.1	67.0	1,026	555	737	1,062
	4 mos.	843	16,013	....	16,476	16,912	2,530	2,300	224	3,351	3,324	1,174	489	5,389	12,627	12,415	76.6	73.4	3,849	2,228	2,895	3,401
Western Pacific	April	1,188	4,163	157	4,422	4,650	610	427	78	734	711	232	248	1,637	3,544	3,256	80.1	70.0	878	443	373	721
	4 mos.	1,188	16,201	585	17,172	17,744	2,303	1,920	315	2,854	2,744	909	1,046	6,497	14,012	12,933	81.6	72.9	3,160	1,620	1,400	2,427
Wisconsin Central	April	1,031	2,467	6	2,704	2,932	290	341	43	468	497	109	111	1,122	2,149	2,237	79.5	76.3	555	199	127	318
	4 mos.	1,031	9,854	47	10,611	10,440	1,197	1,284	190	1,768	1,871	439	430	4,68	8,678	8,833	81.8	84.6	1,933	785	204	2[illegible]5

MARKET OUTLOOK *at a glance*

Carloadings Rise 12.9% Above Previous Week's

Loadings of revenue freight in the week ended June 11 totaled 648,463 cars, the Association of American Railroads announced on June 16. This was an increase of 74,162 cars, or 12.9%, compared with the previous holiday week; a decrease of 61,378 cars, or 8.6%, compared with the corresponding week last year; and an increase of 25,777 cars, or 4.1%, compared with the equivalent 1958 week.

Loadings of revenue freight for the week ended June 4 totaled 574,301 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, June 4

District	1960	1959	1958
Eastern	78,449	100,244	88,167
Allegheny	98,104	132,451	107,274
Pocahontas	55,570	55,798	50,228
Southern	107,676	107,776	115,061
Northwestern	92,893	107,523	90,374
Central Western	97,514	121,566	111,497
Southwestern	44,095	55,259	50,236
Total Western Districts	234,502	284,348	252,651
Total All Roads	574,301	680,617	613,381
Commodities:			
Grain and grain products	37,775	50,366	53,709
Livestock	3,798	4,874	5,499
Coal	103,610	112,580	108,135
Coke	7,212	10,823	5,552
Forest Products	34,804	38,172	38,983
Ore	69,370	80,078	51,232
Merchandise l.c.l.	31,017	41,023	44,371
Miscellaneous	286,715	342,701	305,900
June 4	574,301	680,617	613,381
May 28	640,388	587,063	529,779
May 21	636,808	686,152	570,425
May 14	639,954	692,996	561,040
May 7	641,703	678,160	535,579
Cumulative total, 22 weeks	13,200,414	13,562,370	11,953,951

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended June 4 totaled 9,505 cars, compared with 8,389 for the corresponding 1959 week. Loadings for 1960 up to June 4 totaled 231,168 cars, compared with 167,953 for the corresponding period of 1959.

IN CANADA.—Carloadings for the ten-day period ended May 31 totaled 96,706 cars, compared with 78,836 for the previous seven-day period, according to the Dominion Bureau of Satistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
May 31, 1960	96,706	36,456
May 31, 1959	102,601	38,666
Cumulative Totals		
May 31, 1960	1,454,644	1,464,769
May 31, 1959	622,901	598,317

New Equipment

PIGGYBACK

► *Nickel Plate.*—Has added 70 trailers built by Highway Trailer Co. to its piggyback fleet. Order included 30 closed-van and 10 full open-top trailers, in addition to 30 heavy duty platform trailers. NKP's TOFC trailer fleet now numbers more than 400 units.

SPECIAL

► *Railway Express Agency.*—Will spend $7 million for 1,462 new trucks, tractors and semi-trailer units to be put into service beginning early this summer. Orders will be placed with 18 chassis, body, combination chassis-body, tractor and trailer manufacturers following ICC approval of financing arrangements.

New Facilities

► *Copper Range.*—Company and Duluth, South Shore & Atlantic will pay cost of construction of approaches to connect with tracks on new Portage Lake lift bridge. Federal and state (Michigan) governments will bear cost of lift bridge construction and interlocking system.

► *Southern.*—Placed an order with General Electric Co. for a multi-channel, transistorized microwave and two-way radio communications system to be installed between Washington, D.C., and Atlanta, Ga., 637 miles. Cost: $5.3 million. Scheduled completion: late 1961.

Purchases & Inventories

► *Three Months' Purchases Up 7.2%.*—Purchases by domestic railroads of fuel, material and supplies in this year's first three months were $25,988,000, or 7.2%, higher than in the comparable 1959 period. Purchase and inventory estimates in following tables were prepared by Railway Age.

PURCHASES*	March 1960	Three Months 1960	Three Months 1959
	(000)	(000)	(000)
Rail	$ 6,594	$ 21,817	$ 22,591
Crossties	4,975	14,922	11,591
Other Material	97,587	257,884	217,012
Fuel	30,955	93,572	111,013
Total	$140,111	$388,195	$362,207

*Subject to revision

INVENTORIES * †	March 1,1960	March 1,1959
	(000)	(000)
Rail	$ 55,762	$ 57,319
Crossties	76,017	88,259
Other Material	402,341	401,942
Scrap	24,723	25,375
Fuel	20,663	24,267
Total	$579,506	$597,162

* Subject to revision.
† All total inventory figures taken from ICC statement M-125 for month indicated.

People in the News

ATLANTIC COAST LINE.—Effective July 1, **R. F. Paulk,** assistant general storekeeper, Wilmington, N. C., will be transferred to Waycross, Ga. **M. C. Brinson,** division storekeeper, South Rocky Mount, N. C., transferred to Waycross, effective June 16. **C. C. Daughtridge,** assistant division storekeeper, Rocky Mount, named storekeeper there. **T. W. Goolsby** appointed assistant storekeeper, Rocky Mount.

W. L. Petrie and **A. M. Daniel** appointed general agents, Birmingham, Ala., and Orlando, Fla., respectively.

BALTIMORE & OHIO.—**Raymond A. Rietz,** division freight agent, Springfield, Ill., transferred to Newark, Ohio, succeeding **Loren S. Pritchett,** retired.

CANADIAN NATIONAL.—**Kenneth A. Toy** appointed assistant foreign freight agent (rates), Montreal, Que., succeeding **T. A. Waldron,** promoted.

The title of **A. K. Wilkins,** system supervisor station service, changed to supervisor merchandise services.

CHICAGO & NORTH WESTERN.—**J. R. North** appointed diesel supervisor, Twin Cities division, Minneapolis.

L. G. Tieman appointed division engineer, Lake Shore division, Green Bay, Wis.

W. A. Weiss, auditor of revenues, Chicago, appointed freight claim agent there, succeeding **R. F. Sederberg,** retired. **G. R. Carr,** auditor disbursements, Chicago, named to succeed Mr. Weiss, and in turn is replaced by **D. J. Fliss.**

DOMINION BUREAU OF STATISTICS.—The former Transportation and Public Utilities Section, Ottawa, Ont., Can., has been reorganized into two parts. **A. L. Brown** appointed chief, Transportation Section (in charge of rail, road, water and air transport). **L. S. Evans** appointed chief, Public Utilities Section (in charge of telephone, telegraph and cable; radio and television; gas and oil pipe lines; electric power and other public utilities).

FRISCO.—**J. M. Godfrey** appointed superintendent terminals, St. Louis, succeeding **W. F. Mitchell,** who retired June 15.

LOUISVILLE & NASHVILLE.—**Robert M. McClellan,** who has been with the L&N since May 1918, appointed traveling storekeeper at Louisville, Ky., replacing **R. W. Hall,** retired.

MILWAUKEE.—**T. E. Witt,** trainmaster, Twin Cities Terminals, St. Paul, Minn., appointed assistant superintendent, Dubuque & Illinois division, Ottumwa, Iowa, succeeding **J. F. O'Dore,** retired. **N. D. Owen** named to replace Mr. Witt. **J. D. Cowart** appointed trainmaster, Chicago Terminals, Bensenville, Ill.

NEW HAVEN.—**J. M. Finch,** assistant director of research, at New Haven, Conn., appointed director of research.

Title of **R. H. Davis,** mechanical superintendent, changed to general mechanical superintendent.

NEW YORK CENTRAL.—**Wesley F. French,** manager of rate cost studies and statistics, and **Norman J. Hull, Jr.,** manager of general accounts, appointed assistant comptrollers.

R. E. Hughes appointed general foreman, West Detroit car shops, succeeding **C. M. Ferguson,** transferred.

READING.—**Derwin F. Steimling,** assistant manager, named manager, Port Richmond marine terminal, Philadelphia, succeeding **Edward F. Keene,** retired. **John W. Stapleton,** marine agent, Port Richmond, succeeds Mr. Steimling as assistant manager.

SOO LINE.—**L. R. Kassick,** supervisor of freight cars, Minneapolis, has assumed the duties of **A. M. White,** supervisor of passenger car department, who retired May 31. Mr. White's former position abolished.

SOUTHERN PACIFIC.—**J. W. Corbett,** vice president—system operations, San Francisco, retires June 30.

TEXAS & NEW ORLEANS.—**W. A. Gall, Jr.,** commissary superintendent, appointed special representative — traffic department, Houston.

UNION PACIFIC.—**Walter P. Barrett,** assistant general freight agent, Omaha, Neb., appointed assistant freight traffic manager there, to succeed **Martin Holbrook,** retired. **Charles D. Chambers** replaces Mr. Barrett.

OBITUARY

William T. Cyphers, who retired in Dec. 1951, as tie and timber agent of the **Lackawanna,** died May 30.

Curtis Kies, 74, who retired in 1956 as assistant signal engineer, **Gulf, Mobile & Ohio,** died May 12.

E. H. McCauley, retired vice president—accounting, **Detroit, Toledo & Ironton,** died June 3 in Chatham, Ont.

J. C. McLendon, division storekeeper, **Atlantic Coast Line,** Waycross, Ga., died May 18.

Supply Trade

Duane G. Hansen has joined **Lewis Bolt & Nut Co.** as merchandising manager, a newly created post.

Robert R. Miller has been appointed manager, railroad tool sales, **Farrel-Birmingham Co., Inc.,** Consolidated Machine Tool Division, Rochester, N. Y. Mr. Miller was formerly western sales representative at Long Beach, Cal.

Cline Truck Co., Kansas City, Mo., has appointed **Harry R. Bartell & Associates, Inc.,** St. Louis, Mo. as sales representative for Cline Railroad Trucks in the United States, Canada and Mexico.

Theodore J. Bacalis has joined **A. M. Byers Co.** as a field service engineer, working out of the Detroit office. Mr. Bacalis was previously associated with the Colorado Fuel & Iron Corp.

William D. Wallace has been appointed to the newly created position of vice president-engineering and research, **W. H. Miner, Inc.**

G. C. Scott, Jr., service assistant to the vice president of sales, **Vapor Heating Corp.,** retired June 1. He will be retained by Vapor on a consulting basis.

Duane G. Hansen

Robert R. Miller

I. W. Borda, vice president and general sales manager, **Okonite Co.,** Passaic, N. J., retired June 15. **H. L. Ledermann** appointed assistant manager—product advertising for Okonite.

Robert C. Geekie has been appointed southwestern and St. Louis representative of **Chicago Malleable Castings Co.,** effective July 1.

H. L. Emerson, district sales manager, **Rail Joint Co., Division of Poor & Co.,** St. Louis, has retired. Effective June 15, the Rail Joint Co. will be represented in St. Louis by **Will H. Reaves, Inc.,** 1084 Arcade Building, St. Louis 1.

ALCO Products, Inc., has opened a new $500,000 production center for cold-wound springs at Chicago Heights, Ill. The new facility is housed in an 18,000 sq. ft. addition to the firm's plant at Chicago Heights.

John E. Stark appointed assistant vice-president—industrial relations, **Westinghouse Air Brake Co.** Mr. Stark was formerly director of personnel of R. R. Donnelley & Sons Co., Chicago.

Robert A. Loddengaard has joined **Servo Corp. of America,** Hicksville, L. I., N. Y., as servo instruments section manager, Industrial Products Engineering. Mr. Loddengaard was formerly with Republic Aviation Corp.

Thomas W. Collins, Jr., has been named manager of agricultural chemical sales, General Chemical Division, **Allied Chemical Co.,** New York. Mr. Collins was formerly assistant sales manager.

Daniel B. Lamb has been appointed Detroit division manager for **Oakite Products, Inc.,** succeeding **Thomas R. Smith,** retired. For the past seven years Mr. Lamb has been serving Oakite in the Kokomo, Ind., area.

Dividends Declared

ALLEGHENY & WESTERN.—guaranteed, $3, semi-annual, payable July 1 to holders of record June 17.

BEECH CREEK.—guaranteed stock, 50¢, payable July 1 to holders of record June 15.

BOSTON & ALBANY.—$2.50, payable June 30 to holders of record June 15.

PITTSFIELD & NORTH ADAMS.—$2.50, semi-annual, payable July 1 to holders of record June 24.

TENNESSEE, ALABAMA & GEORGIA.—25¢, semi-annual, payable June 20 to holders of record June 3.

TEXAS & PACIFIC.—$1, quarterly, payable June 30 to holders of record May 23.

WESTERN MARYLAND.—common, 45¢, quarterly; 4% 2nd preferred, 40¢, quarterly; 5% 1st preferred, 15¢, quarterly; 7% 1st preferred, 70¢, quarterly, all payable June 29 to holders of record June 17.

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COMPANY
AIR BRAKE DIVISION WILMERDING, PENNA.

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The Railway Educational Bureau was organized over 50 years ago by the Union Pacific Railroad. A few years later, it became an independent organization in order to serve employees on all American Railroads. Today more than 70 American Railroads co-operate in making the Bureau's wide scope of service available to their employees. On the Bureau's Individual Service Plan, instruction, assignments and evaluation are handled entirely by mail. The low enrollment cost (less than 14¢ per day) entitles you to a very wide selection of subjects.

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- ☐ Lineman
- ☐ Wireman
- ☐ Fireman
- ☐ Engineer
- ☐ Draftsman
- ☐ Signal Maintainer
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Editors Afield

ST. LOUIS, MO.

Preaching from the rostrum was at a minimum at this year's superintendents convention — which is perhaps a little unusual, since a superintendent is normally an easy target for exhortation and admonition from all sides, within and without the industry. Wabash President Herman Pevler, in particular, shook up the usual order of things in delivering the traditional charge to the superintendents to open the meeting. He ran through the accepted list of supervisors' duties and responsibilities — and then launched into a tables-turning discussion of the obligations a management owes its line officers. His remarks won't go unremembered. A sizeable stack of copies, provided by the Wabash and placed on a table outside the meeting room, disappeared like chocolate milk at a school picnic.

The speakers put a lot of emphasis on the supervisor's relationship to his men. The superintendents came to the meeting with the first industry wage agreement less than a week old, with the work rules issue looming up bigger than ever, and also with the C&NW-ORT Supreme Court case fresh in their minds. They also had before them an AARS committee report pointing to a crying need for better leadership and better two-way communication centering on the superintendent.

So the question arose: How? How develop attitudes among the rank-and-file, whose union leadership sometimes appears to have a strangle-hold on thought and action? How improve communication, when employees are being bombarded with anti-management writings—often without answer, effective or otherwise, from management?

One superintendent came up with a logical answer, at least in theory: "Use the employee desire for security to get him to participate in building security by helping build the company." But the old question—How?—still cropped up as new ideas came into the glaring spotlight of pro-and-con discussion.

One eastern road has tried area group conferences, attended monthly by lower-echelon supervision from all departments, to discuss problems posed by a three-man steering committee. Some of the ideas developed can be handled at the local level, others are sent on to the steering committee when higher-up action is required.

A western carrier has developed a work simplification program that brings supervisors together for two hours weekly. Their ideas are pamphletized and distributed all over the railroad—thus producing the idea-interchange everybody agrees is vital. But, to make any kind of program work, a superintendent has to listen. He has to be willing to keep his ear to the ground. . . Actually, it's one of the most important things a supervisor can do."

All well and good, another superintendent commented. But these programs involve supervisors, who are supposed to have management's interests at heart anyhow. What about communication with the employee, the individual who sometimes acts as if he's working more for his general chairman than for his supervisor?

A southwestern road hand-picked a class of 28 trainmen and, working through a public relations representative, held daily meetings for a week. Free-wheeling discussion was encouraged. Some success was noted. Out of that class, the road developed two assistant trainmasters and two yardmasters who had never before held supervisory jobs.

Another eastern road has begun sending a management newsletter to everybody on the property, instead of just to supervisory personnel. The same company has offered prizes of stock shares for certain types of employee suggestions.

Perhaps two thoughts, from an assistant superintendent of transportation, and a vice president can sum up the problem:

- "We have to do something to get them [the employees] to change their thinking, to get them away from the control the brotherhoods have over them."
- "I'm appalled by the rabble-rousing [in some labor publications]. . . If the employee is only fed that kind of thinking, there's no question but that he'll consult the general chairman before he decides if his heart's in it."

—*Gus Welty*

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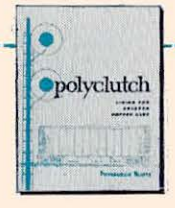

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You Ought To Know...

A first-stage rail rapid transit system (to cost $915,986,000) has been recommended by San Francisco Bay Area Rapid Transit District engineers as "financially feasible." The proposed 98-mile system is a modified version of a preliminary plan calling for 132 miles and tagged at $1.2 billion (RA, May 30, p. 37). The modifications were made to fit the proposed system within the bonding capacity of the district.

Passenger fares in Canada are scheduled to go up under an application by Canadian Passenger Association to the Board of Transport Commissioners. New basic rate sought is up from 4.4 cents to 5 cents per mile, with minimum one-way fare up from 25 cents to 30 cents and round-trip from 50 to 60 cents. The proposal will not affect commuter rates, nor fares between eastern Canada and the Pacific coast, nor "all inclusive" fares. If granted, fare increases will be applied in gradual stages.

The railroads' competitors "obviously are united in a desperate attempt to block the railroads' efforts to better their position in the transportation field," AWR President C. M. Roddewig charged last week in remarks prepared for delivery at a meeting in St. Louis. But, he said, "substantial benefit to the public will result if rail carriers are permitted to become complete transportation companies."

The St. Louis Transit Commission would be created under a charter amendment proposal submitted to the board of aldermen last week. If approved, St. Louis voters will be asked to decide on public ownership and operation of their mass transportation system in the November general election.

Far from being a "museum piece," the railroad box car has held its position well in new car deliveries to the railroads over the past 10 years. From 1950-54, 36.4% of the 335,000 cars delivered were box cars; from 1955-59, 36.3% of the 285,000 cars delivered were box cars. George L. Green, vice president, Pullman-Standard, quoted the figures at the "Suppliers Answer Your Questions" panel discussion during the recent AAR P&S Division meeting, in answer to a question regarding the box car's future. Railway Age erroneously indicated that the 335,000 and 285,000 figures represented box car deliveries alone for the respective periods (RA, June 13, p. 74).

Operating men recognize the value of a good employee publication. Members of the superintendents association, surveyed on employee morale and ways to improve it, put "informing employees through regular publications" first in listing areas where "greatest improvement can be made in employee communication." Also high on the list: Giving employees "understandable information . . . on financial status of company."

Top officers of the American Association of Railroad Superintendents for 1960-61 will be: President, A. J. Cowie, superintendent, CP, Regina, Sask. (RA, June 13, p. 47); vice presidents, W. B. Groome, superintendent, UP, Los Angeles, Calif.; A. W. Colnot, assistant to general manager, B&O, Pittsburgh, Pa.; B. G. Nash, assistant regional manager, C&O, Detroit, Mich.; and R. C. Madsen, terminal superintendent, NYC, Elkhart, Ind.

"Passport to Good Commuting" is the title of a brochure being distributed by the New York Central to 1,500 June graduates of Westchester (N. Y.) high schools. The "passport" contains ticket information, tips on commuter "fashions." One tip: It's "fashionable" to complain about late trains. Another: 93% of NYC's suburban trains are "right on time."

Comprehensive study of "Jurisdictional Conflicts and the Coordination of Transportation" has been issued by the ICC's Bureau of Transport Economics and Statistics. As Bureau Director Edward Margolin explained, the study "identifies and describes the nature of various jurisdictional conflicts and other facets of federal policy which may be obstructing fuller coordination of transportation services and underlines a number of problems that require consideration in this connection."

St. Louis Car Co. will be acquired by General Steel Castings Corp., effective June 30, according to a joint announcement issued by the two companies June 16. The announcement followed a meeting of General Steel Castings' directors to consider methods of acquiring the assets, plants and business of the subway-car producer. The price was not specified.

Accidents claimed the lives of 20 railroad employees in April and caused injuries to 1,000 compared with 10 deaths and 1,103 injuries in April 1959, according to the ICC's Bureau of Transport Economics and Statistics. Two passengers were killed in train accidents in April and 17 were injured, compared with no deaths and 10 injuries in April 1959.

TRRA's success story on its expedited terminal setup at St. Louis (RA, May 9, p. 24) will fall upon receptive ears June 22 in Buffalo, N. Y., when TRRA President G. W. Maxwell tells the "how-we-do-it" story to the Great Lakes Region Rail Shippers Advisory Board. Board President G. W. Wright's comment on the Maxwell presentation: "Just what we've been looking for."

College scholarships valued at $76,000 have been awarded to 25 sons and daughters of PRR employees. Fourteen of the awards are Frank Thomson Scholarships, endowed in 1907 by the children of the railroad's sixth president. Eleven scholarships are sponsored by the Women's Aid of the Pennsylvania Railroad System.

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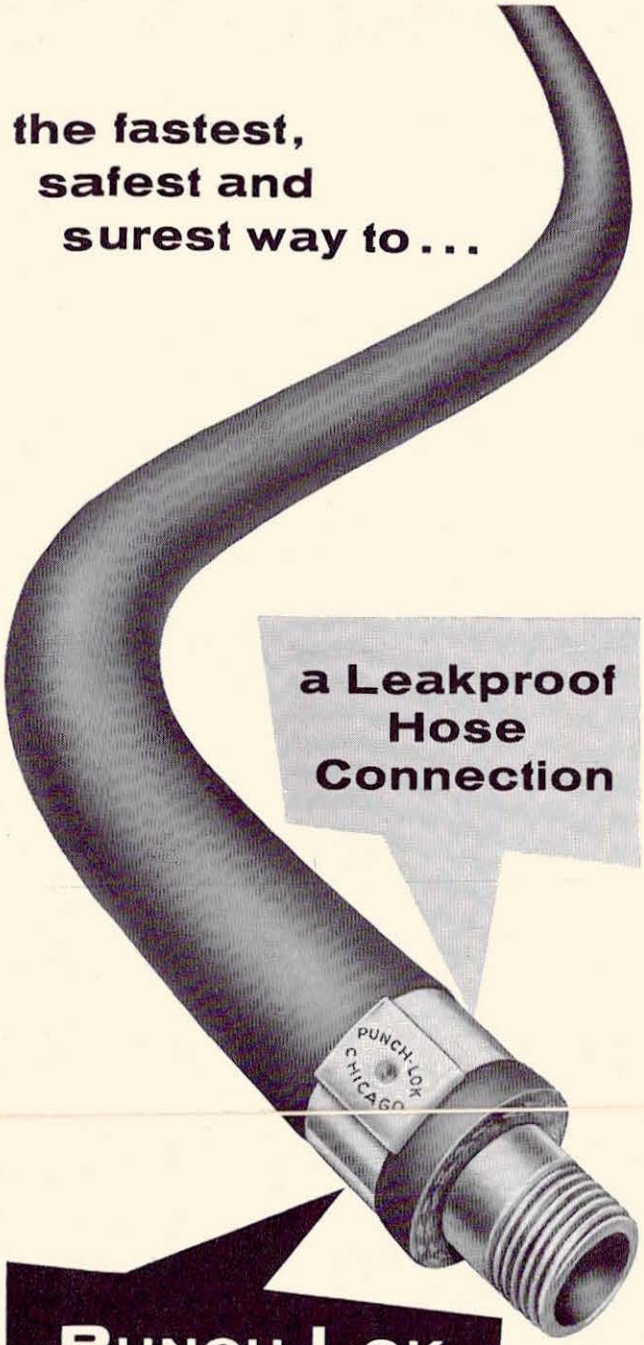

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Spotlight on Freight Traffic

There's no doubt about it—the railroad department now most in the spotlight (and on the spot) is the traffic department. The department's situation, acute as it has been all along, is now intensified by the urgent need of the railroads for added revenue to meet the cost of increased wage rates. If this revenue is to be obtained, it's the traffic department that will have to obtain it.

Most traffic departments are in process of revising their policies and activities to meet drastically changed conditions; and these necessary revisions have to be made while continuing regular operations. As one traffic executive has expressed it: "We have to put out fires and build ourselves a new house at the same time. The carpenters working on the new construction sometimes get tripped up by the firehoses."

Long-run policies that chief traffic officers have to decide upon and get into operation without delay include such major subjects as—

► Development of consistent rate policies (e.g., deciding to what degree, and on what commodities, cost considerations must be the main determinant— and in what situations market competition of shippers has to be given major emphasis.)

► Where costs are an important factor, deciding whether ICC average out-of-pocket cost figures are to be controlling—or whether each railroad's own cost computations should take precedence.

► The extent to which piggyback can be developed and be made to harmonize with the regular carload rate structure—not undermining the latter, and not handicapping the development of piggyback and "containerization."

► Determining the need for—and actual application of—"diversification" by railroads to embrace other agencies of transportation.

► Methods of developing service standards, in cooperation with the operating department, so that dependable schedules can be provided for shippers and receivers.

► Development of incentives to promote efficient loading of freight cars, and exploring the problem of getting paying loads for empty "back-hauls."

► Finding ways and means to end the deficit handling of LCL traffic (which some traffic executives believe to be as serious as the losses from passenger service).

► Recasting the class rate structure—so that class rates will be more realistic from a standpoint of competitive costs and rates, and will actually attract and move some tonnage. Also to be determined is whether present class rate progressions have the proper "shape" (i.e., not being unduly high, competitively, on the shorter hauls); and whether the present classification is not unrealistically elaborate (since the only "classification" private trucks observe is space occupied in relation to weight, and the insurance risk).

► Developing systematic market information on all potential traffic, and channeling this information to salesmen who will use it constructively (along with rate and service data) to build new business.

► Methods of maximizing effectiveness of the sales force—including providing salesmen with adequate incentives, and proper information and guidance, and not giving them more customers to serve than they can deal with adequately.

•

The foregoing list by no means exhausts the assignments now on the agenda of most railroad freight traffic departments, but it does give some idea of the scope and magnitude of this department's task. It is a serious question whether very many freight traffic departments are adequately manned—in proportion to the job which confronts them. And, nowadays, when more men are needed, too often the decision is that "we'll have to get along with what we've got." The answer may have to do for some railroad departments, but it is scarcely satisfactory for the one department on which all others depend for their sustenance.

Freight traffic executives know what their problems are, and most of them are tackling these problems as vigorously as their means will permit. But every railroad department has a vital interest in the success of the traffic department in getting and applying the right answers to the many questions that confront it. No one course of action will have greater impact on the future of railroads than resounding success by traffic officers in readjusting their operations to meet the needs of today's all-out competitive environment.

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